World Organisation for Animal Health

- -

WOAH Collaborative Centre Reports Activities 2024

This report has been submitted: 30 janvier 2025 03:59

CENTRE INFORMATION

***Title of WOAH Collaborating Centre**	Food Safety
***Address of WOAH Collaborating Centre**	National Centre for Food Science 7 International Business Park Singapore 609919
***Tel:**	+65 6019 5748
***E-mail address:**	CHAN_Sheot_Harn@sfa.gov.sg
Website:	http://www.sfa.gov.sg
***Name Director of Institute (Responsible Official):**	A/Prof Joanne Chan Sheot Harn
***Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):**	A/Prof Joanne Chan Sheot Harn Centre Director National Centre for Food Science Singapore Food Agency
***Name of the writer:**	Mr Marshall Ong

TOR 1 AND 2: SERVICES PROVIDED

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

Category	Title of activity	Scope
		NCFS completed a joint review with Food

Epidemiology, surveillance, risk assessment, (true)	Epidemiology and risk assessment	and Agriculture Organization of the United Nations (FAO) on new food sources and production systems which was published in May 2024 in The Institute of Food Technologist's peer-reviewed online journal "Comprehensive Reviews in Food Science and Food Safety". RGU conducted epidemiological researches of livestock and aquaculture diseases. NCFS hosted an attachment for one officer from the Malaysia Ministry of Health, to learn more about SFA's approach and experiences in regulating novel food especially cultivated meat from 22 to 26 July 2024. NCFS co-hosted the food safety risk communication workshop with FSANZ for APEC member economies from 14 to 15 November 2024. The workshop improved the understanding of the APEC Food Safety Risk Communication Framework among member economies and highlighted the importance of a well thought out food safety risk communication strategy. NCFS conducted a roundtable on novel food regulations in conjunction with the Singapore International Agri-Food Week 2024 on 18 November 2024. This year, the roundtable focused on two key topics; 1) Safety assessed media ingredient list, and 2) Production of fermentation derived novel food products. Aside from breakout discussions among stakeholders, there was also a panel discussion on fostering collaboration in the novel food ecosystem. RGU conducted a risk assessment on AMR in aquaculture under the Food Safety Commission of Japan.
		NCFS conducted a post-proficiency testing forum for histamine in tuna meat for ASEAN Member States on 10 September 2024. NCFS conducted laboratory training on pesticide residues analysis (part 2) for Cambodia, Lao PDR, Myanmar and Vietnam from 8 to 10 October 2024 in Cambodia. NCFS conducted heavy metal testing training for four scientists from the Brunei Department of Agriculture and Agrifood

Training, capacity building (true)	Diagnosis, biotechnology and laboratory, epidemiology on Food Safety	from 4 to 8 November 2024. NCFS conducted a virtual training workshop to enhance food testing capabilities across ASEAN from 28 to 29 November 2024. The workshop featured presentations on persistent organic pollutants, specifically polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), dioxins, and per- and polyfluoroalkyl substances (PFAS). The lectures and talks were presented by the experts from Germany Federal Institute for Risk Assessment, Ministry of Agriculture, Forestry and Fisheries of Japan, and Singapore Agency for Science, Technology and Research and NCFS. The event drew a total of 97 participants from nine ASEAN Member States, representatives from various Singapore government agencies and the local private testing laboratories recognized under SFA laboratory recognition programme (LRP). NCFS conducted an ASEAN training workshop for mycotoxins for ASEAN Member States on 19 December 2024. RGU conducted JICA Training “Improving Safety and Quality Control of Livestock Products Focusing on Milk, Meat and Eggs”, seminar on 27 March, 2024 “JICA Safe Milk Promotion in Mbarara Project” for personnel from 5 WOAH Member countries in Obihiro, Japan. RGU provided talks and facilitation at the WOAH Regional Workshop on Zoonotic Tuberculosis and Brucellosis Control in the Asia Pacific in Qindao, China, in September. RGU conducted a Japan Society of Veterinary Epidemiology 7th Technical Workshop: Hands on training on basic epidemiology and statistics, 6-8 August, 2024 in Japan. RGU conducted JICA Infectious disease control and strengthening veterinary service in livestock field: Practice on field epidemiology, for 8 participants from 5 WOAH Member countries on 22-24 October, 2024. RGU provided JICA long term training on veterinary epidemiology, 2 October – 29 November, 2024 to 2

		personnel from Mongolia for Foot and mouth disease and rabies data analysis. RGU provided postdoctoral training through JICA Agri-Net (1 MSc and 3 Ph.D. students), at RGU. RGU provided hoof trimming, bovine reproduction and treatment courses to veterinarians and paravets in Japan.
Zoonoses (true)	Brucellosis and zoonotic tuberculosis research	RGU is conducting field research on brucellosis and zoonotic tuberculosis in animals and humans in Tanzania under JICA/AMED SATREPS.
Diagnosis, biotechnology and laboratory (true)	Diagnosis, biotechnology and laboratory on Food Safety	NCFS conducts diagnosis, biotechnology and laboratory services on Food Safety.
Feed safety (true)	Symposium, seminar, research, and package development	RCFS organised a symposium on AMR-AMU: "Reducing antimicrobial use: Symposium on AMR-AMU" (11 Oct 2024). RCFS have a project to develop methods to generate transgenic mice without conventional equipment, such as a micromanipulator, which accelerates the research of food safety using transgenic mouse strains. Research project “Establish the new method for generation of transgenic mice” is conducted by Dr. Fujii. RCFS have developed and have been maintaining an add-on package called "DCchoice" for the open-source statistical environment R that can be used for the analysis of consumers' preferences for certain aspects of goods and services including food safety and related issues. A typical example of such an analysis is to investigate consumers' willingness to pay for animal products produced under strict control of food safety. Maintaining a statistical package for the use in analyzing consumers’ preferences for food safety and other related issue. NCFS and WOAH Consortium for Food Safety in Asia and Pacific conducted a joint webinar titled “Approach and Research to Reduce Antimicrobial use” on 23 January 2024 where NCFS gave a presentation on

		building a sustainable antimicrobial resistance (AMR) surveillance in the food and agricultural sector in Singapore and the ASEAN region. In February 2024, NCFS, Singapore National Park Board (NParks) and Food and Agriculture Organization of the United Nations (FAO) co-authored a publication on "Regional Guideline 3 for Monitoring and Surveillance of AMR in Bacterial Pathogens in Aquaculture (GL3)". GL3 provides an overview of AMR surveillance in bacterial pathogens in aquaculture. NCFS also collaborated with NParks and FAO to publicize the launch of GL3 through a joint webinar. NCFS conducted a training session for trainees from Thailand's National Institute of Animal Health in AMR laboratory and surveillance modules using the FAO Assessment Tool for Laboratories and Antimicrobial Surveillance Systems from 1 to 2 October 2024. RGU developed a virtual reality system for meat hygiene inspection with a commercial company NEC. Veterinary professionals and students are using it.

TOR 3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main fucus area for which you were designated

Proposal title	Scope/Content	Applicable Area
New work proposals on cell-based foods at Codex	In July 2024, SFA shared intentions to develop and submit two new work proposals on the safety of cell-based food at CCEXEC86. SFA also co-organised a side event at CAC47 on food safety challenges of cell-based foods to increase awareness of cell-based foods to Codex member countries.	Training and Education

3. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

Yes

- -

Research need 1

Please type the Research need: Risk assessment for AMR in aquaculture.

Relevance for WOAH Capacity Building, Standard Setting, Facilitation of international collaboration,

Relevance for the Code or Manual Manual,

Field Epidemiology and Surveillance,

Animal Category Aquatic,

Disease:

Antimicrobial resistance

Kind of disease (Zoonosis, Transboundary diseases) Zoonosis,

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer:

Notes:

Answer:

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

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Singapore National Centre for Food Science, Rakuno Gakuen University, and University of Tokyo	Singapore and Japan	Asia y el Pacífico	To organize seminar series on Food Safety in Asia-Pacific "Emerging topics in our food environment" Session 3 "Approaches and researches to reduce antimicrobial use."
University of Hawaii	United States of America	América	Collaboration studies on mammalian infertility.

TOR 4 AND 5: NETWORKING AND COLLABORATION

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

Yes

- -

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
National Institute of Animal Health, Japan	Japan	Asia and Pacific	Research on Classical Swine Fever.
National Veterinary Assay Laboratory, Japan	Japan	Asia and Pacific	Research and training on AMR.
Onderstepoort Veterinary Research Institute	South Africa	Africa	Research on Rabies.
National Institute of Animal Health, Thailand	Thailand	Asia and Pacific	Workshop on Brucellosis and zoonotic TB.

TOR 6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAH?

Yes

Name of expert	Kind of consultancy	Subject
Kohei Makita	Workshop design and implementation	WOAH Workshop on Brucellosis and zoonotic TB in Qindao, China.
Satoshi Hachimura	Seminar and training	RCFS provided seminars upon visit by WOAH Veterinary Laboratories in Workshop organized by WOAH Regional Representation for Asia and Pacific. RCFSU had also provided training on Food Safety concerning food allergy by livestock products to Trainee and Intern of WOAH Regional Representation for Asia and Pacific.

TOR 7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

Yes

RGU responded to inquiries on Mycobacterium bovis diagnosis from Indonesia.

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAH, to personnel from WOAH Members?

Yes

a) Technical visit : 68

b) Seminars : 343

c) Hands-on training courses: 47

d) Internships (>1 month) : 7

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	NCFS hosted an attachment for one officer from the Malaysia Ministry of Health, to learn more about SFA's approach and experiences in regulating novel food especially cultivated meat from 22 to 26 July 2024.	Malaysia	1
A	Singapore Cooperation Programme (SCP), Assuring Food Safety and Security Course on 21 August 2024	Multi-nationals	19
A	Food Safety Course jointly organised with Brazil on 5 September 2024	Multi-nationals	37
B	Joint webinar titled "Approach and Research to Reduce Antimicrobial use" on 23 January 2024.	Asia-Pacific Region	104
B	Post-proficiency testing forum for histamine in tuna meat for ASEAN Member States on 10 September 2024.	ASEAN Member States	27
B	Food safety risk communication workshop for APEC member	APEC Member Economies	25

	economies from 14 to 15 November 2024.		
B	Virtual training workshop to enhance food testing capabilities across ASEAN from 28 to 29 November 2024.	ASEAN Member States, representatives from various Singapore government agencies and the local private testing laboratories recognized under SFA laboratory recognition programme (LRP)	97
B	ASEAN training workshop on mycotoxins for ASEAN Member States on 19 December 2024.	ASEAN member states	76
B	JICA Training "Improving Safety and Quality Control of Livestock Products Focusing on Milk, Meat and Eggs", seminar on 27 March, 2024 "JICA Safe Milk Promotion in Mbarara Project", by Dr. Makita, RGU, JICA Tokachi, Obihiro, Japan	Cuba, Kosovo, Nigeria, Papua New Guinea, Thailand	5
C	Japan Society of Veterinary Epidemiology 7th Technical Workshop: Hands on training on basic epidemiology and statistics, 6-8 August, 2024, RGU	Japan	9
C	Hoof trimming, bovine reproduction and treatment	Japan	20
C	JICA Infectious disease control and strengthening veterinary service in livestock field: Practice on field epidemiology, 22-24 October, 2024, RGU	Mongolia, Palestine, South Sudan, Paraguay, Samoa	8
B	RCFS provided Seminar upon visit by WOAH Veterinary Laboratories in Workshop organized by WOAH Regional Representation for Asia and Pacific on 17 July, 2024	Timor Leste, Nepal, Bangladesh, Chinese Taipei, India, Korea R.O., Lao PDR, Peru, Malaysia	9
	RCFS provided training on Food Safety concerning food allergy by livestock products to Trainee and	Vanuatu, Philippines	2

A	Intern of WOAH Regional Representation for Asia and Pacific on 19 Nov, 2024		
C	Laboratory training on pesticide residues analysis (part 1) for Cambodia, Lao PDR, Myanmar and Vietnam from 19 to 22 March 2024 in Singapore.	Cambodia, Lao PDR, Myanmar and Vietnam	12
C	Training session for trainees from Thailand's National Institute of Animal Health in AMR laboratory and surveillance modules using the FAO Assessment Tool for Laboratories and Antimicrobial Surveillance Systems from 1 to 2 October 2024.	Thailand	2
C	Laboratory training on pesticide residues analysis (part 2) for Cambodia, Lao PDR, Myanmar and Vietnam from 8 to 10 October 2024 in Cambodia.	Cambodia, Lao PDR, Myanmar and Vietnam	12
C	Heavy metal testing training for four scientists from the Brunei Department of Agriculture and Agrifood from 4 to 8 November 2024.	Brunei Darussalam	4
D	NCFS is hosting one Veterinarian from the Department of Agriculture and Agrifood, Ministry of Primary Resource and Tourism, Brunei Darussalam for a one-year internship from 14 October 2024 to 13 October 2025.	Brunei Darussalam	1
D	JICA long term training on veterinary epidemiology, 2 October – 29 November, 2024, RGU (Foot and mouth disease and rabies data analysis)	Mongolia	2
D	JICA Agri-Net training (1 MSc and 3	Malawi, Thailand, Indonesia, and Fiji	4

	Ph.D. students), RGU		

TOR 8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOAH?

Yes

National/International	Title of event	Co-organiser	Date	Location	No. Participants
Internationally	WOAH Regional Workshop on Zoonotic Tuberculosis and Brucellosis Control in the Asia Pacific	China Animal Health and Epidemiology Center	2024-09-24	Qindao, China	50
Internationally	Approach and Research to Reduce Antimicrobial Use	WOAH Collaborating Centre Consortium for Food Safety in Asia and Pacific	2024-01-24	Webinar	104
Internationally	4th Regional Meeting for Reference Centres in Asia and the Pacific	WOAH Regional Representation for Asia and Pacific	2024-07-24	Tokyo	50

TOR 9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOAH that may be useful to Members of WOAH

a) Articles published in peer-reviewed journals:

71

1. Bin Li, Sew Lay Chua, Dingyi Yu, Sheot Harn Chan, Angela Li (3 January 2024): Determination and Characterization of Gold Nanoparticles in Liquor Using Asymmetric Flow Field-Flow Fractionation Hyphenated with Inductively Coupled Plasma Mass Spectrometry. Molecules, 29, 248. DOI:10.3390/Molecules29010248

2. Muhd Tarmidzi Fua'di, Benjamin Er, Sylvester Lee, Pei Pei Chan, Joanna Khoo, Desmond Tan, Huilin Li, Imran Roshan Muhammad, Pream Raj, Lalitha Kurupatham, Vernon Lee, Li Kiang Tan, Sheot Harn Chan, Angela Li, Kyaw Thu Aung (6 January 2024): Characteristics of Gastroenteritis Outbreaks Investigated in Singapore: 2018-2021. International Journal of Environmental Research and Public Health, 21 (1). DOI: 10.3390/ijerph21010064

3. Jun Xiang Ong, Patrick Gan, Ken Kah Meng Lee, Yuansheng Wu, Sheot Harn Chan (23 January 2024): An Assessment of Natural and Artificial Radionuclide Content in Powdered Milk Consumed by Infants and Toddlers in Singapore. Journal of Radioanalytical and Nuclear Chemistry, 333 (2). DOI: 10.1007/s10967-023-09331-3

4. Geraldine Songlen Lim, Jun Cheng Er, Kalpana Bhaskaran, Paul Sin, Ping Shen, Kah Meng Lee, Guat Shing Teo, Joachim Mun Choy Chua, Peggy Chui Fong Chew, Wei Min Ang, Joanna Lee, Sheena Wee, Yuansheng Wu, Angela Li, Joanne Sheot Harn Chan, Kyaw Thu Aung (6 February 2024): Singapore's Total Diet Study (2021–2023): Study Design, Methodology, and Relevance to Ensuring Food Safety. Foods 2024, 13, 511. DOI: 10.3390/foods13040511

5. Haiyan Li, Lin Min Lee, Dingyi Yu, Sheot Harn Chan, Angela Li (13 February 2024): An Optimized Multi-technique Based Analytical Platform for Identification, Characterization and Quantification of Nanoplastics in Water. Talanta, 272. DOI:

10.1016/j.talanta.2024.125800

6. Yong Quan Tan, How Chee Ong, Adeline Mei Hui Yong, Vittorio Fattori, Keya Mukherjee (19 March 2024). Addressing the Safety of New Food Sources and Production Systems. Comprehensive Reviews in Food Science and Food Safety, 23, e13341. DOI: 10.1111/1541-4337.13341

7. Xiau Yi Tan, Zan Xin Chin, Sew Lay Chua, Ken Kah Meng Lee, Yuansheng Wu, Joanne Sheot Harn Chan (March 2024): Determination of Ethoxyquin by Ultra-high Performance Liquid Chromatography with Tandem Mass Spectrometry and a Singapore Survey of Ethoxyquin Residues in Eggs, Egg Products and Poultry. Food Additives & Contaminants Part A Chemistry Analysis Control Exposure & Risk Assessment, 41 (3). DOI: 10.1080/19440049.2024.2308012

8. Zan Xin Chin, Sew Lay Chua, Yi Li Ang, Sheena Wee, Ken Kah Meng Lee, Yuansheng Wu & Joanne Sheot Harn Chan (10 April 2024): Illegal Synthetic Dyes in Spices: A Singapore Case Study. Food Additives & Contaminants: Part B. DOI: 10.1080/19393210.2024.2326431

9. Hui Yi Lim, Dingyi Yu, Sheot Harn Chan, Angela Li (24 April 2024): A Suspect Screening Strategy With Automated Data Processing Tools For The Comprehensive Detection Of Emerging Chemical Hazards In Food. Food Control, 163. DOI: 10.1016/j.foodcont.2024.110538

10. Weida Tong, Michael Renaudin, Joshua Xu, Leihong Wu, Rebecca Kusko, Liam Childs, Monica Carvalho-Soares, Hadas Lerner Nussbaum, Anat Boehm-Cagan, Benjamin Er, Anna Maria Gerdina Pasmooij, Norimasa Tamehiro (April 2024): Context is Everything in Regulatory Application of Large Language Models (LLMs). Drug Discovery Today, 29 (4). DOI: 10.1016/j.drudis.2024.103916

11. Kae Hwan Sim, Jiaying Ho, Jia Qi Lim, Sheot Harn Chan, Angela Li, Kern Rei Chng (7 May 2024): A Metagenomics-based Workflow for the Detection and Genomic Characterization of GBS in Raw Freshwater Fish. Food Microbiology. DOI: 10.1128/spectrum.03276-23

12. Shirin M. Usmani, Susanne Bremer-Hoffmann, Karlien Cheyns, Francesco Cubadda, Verónica I. Dumit, Sylvia E. Escher, Valerie Fessard, Arno C. Gutleb, Thibaut Léger, Yuk-Chien Liu, Jan Mast, Emily McVey, Birgit Mertens, Daniela Montalvo, Agnes G. Oomen, Vera Ritz, Tommaso Serchi, Holger Sieg, Katherina Siewert, Deborah Stanco, Eveline Verleysen, Olimpia Vincentini, Calvin W. S. Yeo, Dingyi Yu, Meike van der Zande, Andrea Haase (23 May 2024): Review of New Approach Methodologies for Application in Risk Assessment of Nanoparticles in the Food and Feed Sector: Status and Challenges. EFSA Supporting Publication. DOI: 10.2903/sp.efsa.2024.EN-8826

13. Jia En Valerie Sin, Ping Shen, Lifei Huang, Yuansheng Wu, Sheot Harn Chan (18 August 2024): Determination of Cannabinoids in Meat Products and Animal Feeds in Singapore Using Liquid Chromatography–Tandem Mass Spectrometry. Foods, 13 (16). DOI: 10.3390/foods13162581

14. Shin Giek Goh, Luhua You, Charmaine Ng, Xuneng Tong, Sanjeeb Mohapatra, Wei Ching Khor, Hong Ming Glendon Ong, Kyaw Thu Aung, Karina Yew-Hoong Gi (28 August 2024): A Multi-pronged Approach to Assessing Antimicrobial Resistance Risks in Coastal Waters and Aquaculture Systems. Water Research, 266. DOI: 10.1016/j.watres.2024.122353

15. Jun Xiang Ong, Jonathan Zheng Ing Kok, Ken Kah Meng Lee, Kern Rei Chng, Yuansheng Wu, Joanne Sheot Harn Chan (5 September 2024): Evaluation of Tritium, Gross Alpha and Gross Beta Radioactivity Levels in Tap and Bottled Drinking Water in Singapore. Journal of Radioanalytical and Nuclear Chemistry. DOI: 10.1007/s10967-024-09766-2

16. Shirin M. Usmani, Susanne Bremer-Hoffmann, Karlien Cheyns, Francesco Cubadda, Verónica I. Dumit, Sylvia E. Escher, Valerie Fessard, Arno C. Gutleb, Thibaut Léger, Yuk-Chien Liu, Jan Mast, Emily McVey, Birgit Mertens, Daniela Montalvo, Agnes G. Oomen, Vera Ritz, Tommaso Serchi, Holger Sieg, Katherina Siewert, Deborah Stanco, Eveline Verleysen, Olimpia Vincentini, Calvin W. S. Yeo, Dingyi Yu, Meike van der Zande, Andrea Haase (16 September 2024): Review of New Approach Methodologies for Application in Risk Assessment of Nanoparticles in the Food and Feed Sector: Status and Challenges. EFSA External Scientific Report. DOI: 10.2903/sp.efsa.2024.EN-8826

17. Yen Ching Lim, Kar Hui Ong, Wei Ching Khor, Favian Yue Xuan Chua, Jia Qi Lim, Li Kiang Tan,Swaine L. Chen, Wai Kwan Wong, Matthias Maiwald, Timothy Barkham, Tse Hsien Koh, Joanna Khoo, Joanne Sheot Harn Chan and Kyaw Thu Aung (19 September 2024): Sequence Types and Antimicrobial Resistance Profiles of Salmonella Typhimurium in the Food Chain in Singapore. Microorganisms 2024, 12 (1912). DOI: 10.3390/microorganisms12091912

18. Tan Yong Quan (9 October 2024) FAO's Food Safety Foresight Technical Meeting Report: Plant-based Food Products, Precision Fermentation and 3D Food Printing. FAO's Food Safety Foresight Technical Meeting Report, 13-17 November 2023, Rome. DOI: 10.4060/cd2430en

19. Archana Gautam, Hui Kheng Lim, Jasmine Jia'En Li, Christopher Owen Hughes, Calvin Wee Sing Yeo, Moumita Rakshit, David Ian Leavesley, Michelle Jing Sin Lim, Joseph Choon Wee Tan, Li Yi Tan, Joanne Sheot Harn Chan, Benjamin Paul Chapman Smith, Kee Woei Ng (11 October 2024): Assessing Nanotoxicity of Food-relevant Particles: A Comparative Analysis of Cellular Responses in Cell Monolayers versus 3D Gut Epithelial Cultures. Food and Chemical Toxicology. DOI: 10.1016/j.fct.2024.115055

20. Angela Li, Jun Cheng Er, Wei Ching Khor, Mei Hui Liu, Valerie Sin, Sheot Harn Chan, Kyaw Thu Aung (21 November 2024): Integration of National Chemical Hazards Monitoring, Total Diet Study and Human Biomonitoring Programmes for Food Safety Exposure Assessment in Singapore. Journal of Food Protection. DOI: 10.1016/j.jfp.2024.100414

21. Edward Lee, Benjamin Er, Joanna Khoo, Sheot Harn Chan, Kyaw Thu Aung (3 December 2024): Modelling the Effects of Intervention Measures in Reducing the Risk of Norovirus Transmission in Preschool Settings. PLOS One. 19 (12). DOI: 10.1371/journal.pone.0314586

22. Yanwen Wang, Kung Ju Lin, Emily Huey Shyan Teo, Yong Quan Tan, Yuansheng Wu, Kern Rei Chng, Joanne Sheot Harn Chan, Li Kiang Tan (4 December 2024): Monitoring of Genetically Modified Crops in Food Products in Singapore. Food Control. 171. DOI: 10.1016/j.foodcont.2024.111092

23. Matsubara, K., Li, J., Enomoto, Y., Takahashi, T., Ma, M., Ninomiya, R., Kazami, D., Hirayama, K. 2024. Beneficial role of heat-treated Lactobacillus sakei HS-1 on growth performance, nutritional status and gut microbiota in weaned piglets. Journal of Animal Physiology and Animal Nutrition 108: in press.

24. Perera, J. L. C. S., Pathmalal, M. M., De Silva, D. P. N., Miura, K., Yamada, A., Hirayama, K. 2024. Identification of antimicrobial resistance profiles and antimicrobial resistance genes of Campylobacter isolates from broiler farms in Sri Lanka. International Journal of Life Science and Agriculture Research 3: 14-21. DOI: https://doi.org/10.55677/ijlsar/V03I1Y2024-03

25. R. Nakagawa, W. Gu, H. Mizobuchi, S. Kodera, T. Takano, Y, Wang, I. Fujioka, K. Uchida, H. Nakajima-Adachi, S. Hachimura. Lactococcus lactis subsp. cremoris YRC3780 modifies function of mesenteric lymph node dendritic cells to modulate the balance of T cell differentiation inducing regulatory T cells. Front. Immunol. 15:1395380 (2024)

26. Matsuya S, Fujino K, Imai H, Kusakabe KT, Fujii W, Kano K*. Establishment of African pygmy mouse induced pluripotent stem cells using defined doxycycline inducible transcription factors. Sci Rep. 14. 3204. 2024*

27. Minami A, Asai T, Tachibana T, Tanaka Y, Nakajima M, Tamura S, Nakazawa M, Tsuru Y, Fujiyama Y, Tagawa YI, Kuzuyama T, Kakuta S, Ogawa T. Establishment of the improved colonization of Escherichia coli laboratory strain in the intestine mediated by single gene deletion. Biochem Biophys Res Commun. 2024 Nov 19;734:150448. doi: 10.1016/j.bbrc.2024.150448.

28. Kuboyama-Sasaki A, Takahashi Y, Xia C, Hiro K, Kobayashi T, Ohdan H, Shimizu M, Yamauchi Y, Kiyono H, Sato R (2024) Establishment of a cell culture platform for human liver organoids and its application for lipid metabolism research. Biotechnology Journal 19, 2300365.

29. Saito H, Nishimura M, Sato R, Yamauchi Y. (2024) Quantitative Determination of Cholesterol Hydroxylase Specificities by GC–MS/MS in Living Mammalian Cells. Bio Protoc. e4924.

30. Yamauchi Y, Abe-Dohmae S, Iwamoto N, Sato R, Yokoyama S (2024) ABCA1 deficiency causes tissue-specific dysregulation of the SREBP2 pathway in mice. Biochimica et Biophysica Acta - Molecular and Cell Biology of Lipids 1869. 159546.

31. Maruyama T, Takahashi Y, Hiro K, Murase K, Kojima H, Okabe T, Yamauchi Y, Sato R. Discovery of Novel Binders to Sterol Regulatory Element-Binding Protein-1 by High-Throughput Screening (2024) ACS Medicinal Chemistry Letters 15. 667-676.

32. Misawa Y, Takahashi Y, Sasaki T, Sato R, Yamauchi Y. (2024) Transcriptome analysis reveals selectively high expression of beige adipocyte marker genes in mouse perinephric fat. Bioscience, Biotechnology, and Biochemistry 88. 1449-1452

33. Matsuyama R, Kido N, Omori R. (2024) Estimating the impact of sarcoptic mange epidemic on the population size of wild raccoon dogs (Nyctereutes procyonoides) from wildlife rescue data. International Journal of Parasitology: Parasites and Wildlife 2024, 25: 101010. doi: 10.1016/j.ijppaw.2024.101010.

34. Takayama Y, Shimakawa Y, Matsuyama R, Chowell G, Omori R, Nagamoto T, Yamamoto T, Kenji Mizumoto. (2024) SARS-CoV-2 Infection in School Settings, Okinawa Prefecture, Japan, 2021–2022. Emerging Infectious Diseases. 30:2343-2351. 2024. doi: 10.3201/eid3011.240638.

35. Takayama Y, Shimakawa Y, Aizawa Y, Butcher C, Chibana N, Collins M, Kamegai K, Kim TG, Koyama S, Matsuyama R, Matthews MM, Mori T, Nagamoto T, Narita M, Omori R, Shibata N, Shibata S, Shiiki S, Takakura S, Toyozato N, Tsuchiya H, Wolf M, Yamamoto T, Yokoyama S, Yonaha S, Mizumoto K. (2024) SARS-CoV-2 IgG seroprevalence in the Okinawa Main Island and remote islands in Okinawa, Japan, 2020-2021. Japanese Journal of Infectious Diseases. Epub ahead of print. doi: 10.7883/yoken.JJID.2023.255.

36. Masumoto Y, Kawasaki H, Tsunematsu M, Matsuyama R, Kakehashi M. (2024) Decisions and Influential Factors Regarding Class-Specific School Closures Against Seasonal Influenza Outbreak. Cureus 16,e62394. 2024. doi: 10.7759/cureus.62394. BMC Infectious Diseases 24(1), 542. 2024. doi: 10.1186/s12879-024-09427-5

37. Takayama Y, Xu YS, Shimakawa Y, Chowell G, Kozuka M, Omori R, Matsuyama R, Yamamoto T, Mizumoto K. Assessment of fever screening at airports in detecting domestic passengers infected with SARS-CoV-2, 2020-2022, Okinawa prefecture, Japan.

38. Matsuyama R, Abe N, Sato A, Ishikura Y, Ishikawa T, Otake A, Watanabe R, Sunadome M, Makita K, Murakami T. (2024) Evaluating the impact of application of anaerobic bacterial fermentation enhancer on digital dermatitis. Journal of Veterinary Medical Science 86(7), 796-800. doi: 10.1292/jvms.23-0442

39. Ukita M, Matsuyama R, Isoda N, Omori R, Yamamoto T, Makita K. (2024) Identifying effective biosecurity measures for preventing the

introduction of classical swine fever in pig farms in Japan: under the condition of absence/presence of observable infected wild boar. Transboundary and Emerging Diseases 2024, 1305664, 1-16. doi: 10.1155/2024/1305664
40. Hlaing SS, Kubota S, Makita K, Win YT, Myint HT, Kono H. (2024) Embedded customs in rural society and the spread of infectious diseases: bovine brucellosis in Myanmar. Animal Bioscience 37(3), 547-554. doi: 10.5713/ab.23.0273.
41. Mogano K, Sabeta CT, Suzuki T, Makita K, Chirima GJ. (2024) Patterns of animal rabies prevalence in northern South Africa between 1998 and 2022. Tropical Medicine and Infectious Disease 9(1): 27. doi: 10.3390/tropicalmed9010027
42. Fukuda A, Suzuki M, Makita K, Usui M. (2024) Low-frequency transmission and persistence of antimicrobial-resistant bacteria and genes from livestock to agricultural soil and crops through compost application. PLoS ONE 19(5) e0301972. doi: 10.1371/journal.pone.0301972
43. Kuwata K, Kuninaga N, Kimura Y, Makita K, Isoda N, Shimizu Y, Sakoda Y. (2024) Evaluation of immune status of pigs against classical swine fever for three years after the initiation of vaccination in Gifu Prefecture, Japan. Pathogens 13(8), 616. doi: 10.3390/pathogens13080616
44. Makita K, Zhang D, Okamura A, Fukuda A, Tokunaga N, Asai T, Shimazaki Y, Usui M. (2024) Quantitative release assessment for beta-lactamase–producing Escherichia coli of dairy origin into vegetables. CABI One Health 3:1. doi: 10.1079/cabionehealth.2024.0021
45. Chisato K, Yamazaki T, Kayasaki S, Fukumori R, Higuchi H, Makita K, Oikawa S. (2024) Metabolites and physical scores as possible predictors for postpartum culling in dairy cows. Research in Veterinary Science 179, 105387. doi: 10.1016/j.rvsc.2024.105387
46. Fukui M, Uraguchi K, Numa H, Suzuki T, Karasawa M, Maita K, Yokozawa T, Hayama Y, Makita K. (2024) Ecological factors associated with fox feces density in an Echinococcus multilocularis endemic zone in Japan. Frontiers in Veterinary Science 11: 1387352. doi: 10.3389/fvets.2024.1387352
47. Fukuda A, Nakajima C, Suzuki Y, Usui M. (2024) Transferable linezolid resistance genes (optrA and poxtA) in enterococci derived from livestock composts at Japanese farms. J Glob Antimicrob Resist. 36: 336–344.*
48. Enami M, Fukuda A, Yamada M, Kobae Y, Nakajima C, Suzuki Y, Usui M. (2024) Heated scallop-shell powder and lime nitrogen effectively decrease the abundance of antimicrobial-resistant bacteria in aerobic composting. Environ Technol Innov. 34: 103590.*
49. Fukuda A, Suzuki M, Makita K, Usui M. (2024) Low-frequency transmission and persistence of antimicrobial-resistant bacteria and genes from livestock to agricultural soil and crops through compost application. PLoS ONE. 19: e0301972.*
50. Sabala RF, Fukuda A, Nakajima C, Suzuki Y, Usui M, Elhadidy M*. (2024) Carbapenem and colistin-resistant hypervirulent Klebsiella pneumoniae: An emerging threat transcending the Egyptian food chain. J Infect Public Health. 17: 1037–1046.*
51. Takeichi K, Fukuda A, Shono C, Ota N, Nakajima C, Suzuki Y, Usui M. (2024) Association of toxin-producing Clostridioides difficile with piglet diarrhea and potential transmission to humans. J Vet Med Sci. 86: 769–776.*
52. Koide K, Kim H, Whelan M, Belotinidos L, Tanomsridachchai T, Changkwanyeun R, Usui M, Croinin T, Thapa J, Nakajima C, Suzuki Y. (2024) WQ-3810, a fluoroquinolone with difluoropyridine derivative as the R1 group exerts high potency against quinolone-resistant Campylobacter jejuni. Microbiol Spectr. 20: e0432223.
53. Azuma T, Usui M, Hasei T, Hayashi T. (2024) On-site inactivation for disinfection of antibiotic-resistant bacteria in hospital effluent by UV and UV-LED. Antibiotics. 13: 711.
54. Usui M, Azuma T, Katada S, Fukuda A, Suzuki Y, Nakajima C, Tamura Y. (2024) Hyperthermophilic composting of livestock waste drastically reduces antimicrobial resistance. Waste Manag Bullet. 2: 241–248.
55. Makita K, Okamura A, Fukuda A, Tokunaga T, Asai T, Shimazaki Y, Usui M. (2024) Quantitative release assessment for beta-lactamase–producing Escherichia coli of dairy origin into vegetables. CABI One Health. 3: 1.
56. Azuma T, Usui M, Hasei T, Hayashi T. (2024) Occurrence and environmental fate of anti-influenza drugs in a subcatchment of the Yodo river Basin, Japan. Sci Total Environ. 953: 176086.
57. Okamura S, Fukuda A, Usui M. (2024) Rapid detection of causative bacteria including multiple infections of bovine respiratory disease using 16S rRNA amplicon-based nanopore sequencing. Vet Res Commun. 48: 3873–3881.
58. Suzuki Y, Horita T, Nishimura E, Xie H, Tamai S, Kobayashi I, Fukuda A, Usui M. (2024) Crop contamination evaluation by antimicrobial-resistant bacteria via livestock waste compost-fertilized field soil. J Hazard Mater. 480: 135987.
59. Usui M, Fukuda A, Azuma T, Kobae Y, Hori Y, Kushima M, Katada S, Nakajima C, Suzuki Y. (2024) Vermicomposting reduces the antimicrobial resistance in livestock waste. J Hazard Mater Adv. 100491.
60. Fukuda A, Kozaki Y, Kurekci C, Suzuki Y, Nakajima C, Usui M. (2024) Spreading ability of tet(X)-harboring plasmid and effect of tetracyclines as a selective pressure. Microb Drug Res. 30: 489–501.
61. Satoh H, Chisato K, Fukumori R, Tharwa R, Oikawa S. (2024) A Case–Control Study on the Usefulness of Serum Lecithin: Cholesterol

Acyltransferase Activity as a Predictor of Retained Placenta in Close-Up Dairy Cows. Animals 14 3640
62. Sato H, Kumano R, Fukumori R, Oikawa S. (2024) Lipoprotein composition of calves before and after weaning and comparison with adult cows. J Vet Med Sci 87
63. Fukumori R, Nakayama T, Hirose M, Norimura I, Izumi K, Shimada K, Mineo H, Steele M.A., Gondaira S, Higuchi H, Watanabe T, Ueda H, Sano T, Chisato K, Oikawa S. (2024) Effects of amount of lactose in milk replacer on gastrointestinal function of dairy calves. Anim Feed Sci Technol 116157
64. Masuda Y, Fukumori R, Tomoshige M, Sarentonglaga B, Sugino T, Nagao Y. (2024) Effect of feeding calf starter with calcium salts of medium-chain fatty acids on the growth and metabolic hormones in calves. J Anim Sci 102 166
65. Fukumori R, Hirose M, Norimura I, Nakayama T, Shimada K, Mineo H, Steele M. A, Gondaira S, Higuchi H, Chisato K, Oikawa S, Izumi K. (2024) Effects of lactose content in milk replacer on apparent digestibility, growth, liver mRNA expression, and blood parameters related to metabolism of dairy calves. JDS Commun
66. Satoh H, Fukumori R, Kumano R, Kamata M, Shimada K, Izumi K, Oikawa S. (2024) Effects of starch content of calf starter on rumen properties and blood concentrations of metabolites and hormones in dairy calves under a high plane of milk replacer feeding. Anim Sci J 95 e13927
67. Kayasaki S, Satoh H, Oguchi K, Chisato K, Fukumori R, Higuchi H, Suzuki K, Oikawa S. (2024) Characteristics of failure of passive transfer at the herd level using the serum immunoglobulin G concentration as an indicator on dairy farms in eastern Hokkaido, Japan. J Vet Med Sci 86 809-815
68. Osada S, Chisato K, Fukumori R, Oikawa S. (2024) Comparison of serum very low-density lipoprotein concentrations during transition in primiparous and multiparous cows. J Vet Med Sci 86(4) 358-362
69. Chisato K, Yamazaki T, Kayasaki S, Fukumori R, Oikawa S. (2024) Epidemiological features of postpartum subclinical ketosis in dairy herds in Hokkaido, Japan. Animals 14 1-14
70. Imaizumi N, Gondaira S, Kamioka M, Sugiura T, Eguchi A, Nishi K, Fujiki J, Iwano H, Higuchi H. (2024) Innate immune response of bovine mammary epithelial cells in Mycoplasma bovis mastitis using an in vitro model of bovine mammary gland infection. J Vet Med Sci doi: 10.1292/jvms.24-0097.
71. Nagahata H, Komori N, Fukutome M, Sugiura T, Hisaeda K, Gondaira S, Higuchi H, Ando T, Nakada K. (2024) Changes in mammary infection status in dairy cows during the dry period using dry cow therapy approaches on three farms. Anim Sci J sdoi: 10.1111/asj.13993.

b) International conferences:
40
1. Tan Yong Quan (March 2024) SFA's regulatory framework for cell-cultivated food. OECD Working Party for the Safety of Novel Foods and Feeds (WP-SNFF). Oral
2. Tan Yong Quan (March 2024) Implementation of a regulatory framework for genome edited crops for use in food and feed. Workshop on Biotechnology Policies to Bolster ASEAN Food Security (ASEAN and USDA. Oral
3. Shen Ping (April 2024) Capability development and technical exchange for per- and polyfluoroalkyl substances (PFAS) testing in complex food matrices. SFA-BfR Mini-symposium. Oral
4. Low Teng Yong (April 2024) Singapore's Regulatory Framework for Novel Foods. Westminster Food and Nutrition Forum. Oral
5. Soon Fang Min (May 2024) Sharing on SFA Risk Communication Framework. APEC Risk Communication Workshop. Oral
6. Tan Yong Quan (September 2024) Implementation of a regulatory framework for genome edited crops for use in food and feed. ASEAN Gene Editing Workshop: "Gene Editing Regulation and Prospects in ASEAN" (ASEAN and USDA). Oral
7. Francesca Ong (September 2024) New Work Proposals for Cell-based foods at Codex. APFRAS Webinar. Oral
8. Wang Yanwen (October 2024) Singapore Country Report GMO testing capability status update. 21st Meeting of the ASEAN GM Food Testing Network. Oral
9. Tan Yong Quan (October 2024) Implementation of a regulatory framework for genome edited crops for use in food and feed. Seminar on Precision Agriculture and Gene Editing Technology for Sustainable food Production: Science and Communication (ILSI). Oral
10. Low Teng Yong (October 2024) Singapore's Regulatory Framework for Novel Foods and International Engagement Efforts. Agriculture Breakthrough Dialogue. Oral
11. Low Teng Yong (October 2024) Singapore's Regulatory Framework for Novel Foods and International Engagement Efforts. Regulating the Future of Food Conference 2024. Oral
12. Valerie Sin (October 2024) Singapore's Regulatory Framework for Novel Foods. 18th Dubai International Food Safety Conference. Oral

13. Ong How Chee (October 2024) Singapore's experiences in regulating novel foods. China International Food Safety & Quality Conference 2024. Oral
14. Roshini (November 2024) AMR surveillance in Food: Campylobacter species in poultry meat. AMR Research Symposium 2024. Oral
15. Li Haiyan (November 2024) Analytical Developments and Challenges for Micro/Nanoplastics Analysis in Food. RAFA 2024. Oral
16. Ignatius Lim (November 2024) Occurrence and Dietary Exposure of Per- and Polyfluoroalkyl Substances (PFAS) in Commonly Consumed Food in Singapore. RAFA 2024. Poster
17. Francesca Ong (November 2024) Food Safety Challenges in Cell-based Food Productions and Opportunities for Standardization. 44th Codex Alimentarius Commission side event. Oral
18. Emily Teo (December 2024) Implementation of a regulatory framework for genome edited crops for use in food and feed. Enabling Regulatory Environment for Genome Editing in Agriculture in Korea: Opportunities and Possibilities (AFSI). Oral
19. Tan Yong Quan (December 2024) Singapore's regulatory framework for novel foods. International Conference for Alternative Proteins for Food and Feed (BfR). Oral
20. Wesley Yu (December 2024) Occurrence and dietary exposure to PFAS from seafood consumed in Singapore. 5th Meeting of the Committee on Halogenated Organic Contaminants of the BfR Commission on Contaminants in the Food Chain. Oral
21. Fujii W. Reprogramming Conditions for Induced Pluripotent Stem Cells using Immortalized Mink Cells. Society for the Study of Reproduction 2024 Annual Meeting, Dublin, Ireland. Jul 2024
22. Min MA, Yuriko ENOMOTO, Tomotugi TAKAHASHI, Masayoshi KUWAHARA and Junyou LI. Studies on diarrhea and growth performance of early weaned piglets after supplementation with 0.5% and 1.0% quebracho tannin product MGM-P. ASAS-CSAS-WSASAS Annual Meeting Alberta, Canada. July 21-25, 2024.
23. Zhuoyu YANG, Kaithing WANG, Peiwen SHI, Min MA, Xueyuan LI, Yuriko ENOMOTO, Tomotugi TAKAHASHI, Masayoshi KUWAHARA and Junyou LI. Effects of long period treatment with Quebracho Tannin Product, MGM-P, to Gut Microorganisms and Growth Performance in growing and finishing pig. 75th EAAP Annual Meeting. Florence, 1-5 September 2024.
24. Ryo Utsunomiya, Tomoaki Nakatani, Yasuhiro Nakashima, "Purchases for Family —Heterogeneity of Demand Responses to Changes in Price and Expenditure—", a paper presented at the 32nd International Conference of Agricultural Economists, New Delhi, India, August 2024.
25. Takumi Makino, Hidetoshi Sakurai, Ryuichiro Sato, Yoshio Yamauchi. BMP signaling controls skeletal muscle cell maturation. Joint conference of the 22nd Annual Meeting of Asian and Oceanian Myology Center and the 10th Annual Meeting of Japan Muscle Society. 2024. (Nara)
26. Matsuyama R, Ukita M, Esaki M, Ohta N, Okuda Y, Ozawa M, Onuma M. Evaluating the expansion of host range in highly pathogenic avian influenza among wild birds in Japan The 17th Asian Society of Conservation Medicine conference. September 30- October 4, 2024. Ulaanbaatar.
27. Matsuyama R, Uchida L, Chisato K, Ukita M, Fukuda A, Gondaira S, Fukumori R, Usui M, Higuchi H, Oikawa S, Muramatsu Y, Makita K. Effectiveness of virtual reality education on food safety: a case of meat hygiene inspection training in veterinary education, The 6th International Conference on Healthcare, SDGs and Social Business. August 28-30, 2024. Hiroshima.
28. Matsuyama R. Challenges in Collaboration through a One Health Approach: A Veterinarian's Perspective. The 6th International Conference on Healthcare, SDGs and Social Business. August 28-30, 2024. Hiroshima.
Matsuyama R, Yamamoto T, Hayama Y, Omori R. Estimating Waning Immunity Against Classical Swine Fever in Japanese Wild Boar. The 17th International Symposium on Veterinary Epidemiology and Economics. November 11-15, 2024, Sydney.
29. Makita K, Mathew C, Ukita M, Matsuyama R, Usui M, Suzuki T, Watarai M, Kubota S, Umezaki M, John K, Matemba L, Ezekiel M, Rich KM, Bonfoh B, Halliday J, Msalya G, Karimuribo E. Co-designing Neglected Zoonosis Intervention through One Health, Education, and Public-private partnership. The 17th International Symposium on Veterinary Epidemiology and Economics. November 11-15, 2024, Sydney.
30. Ukita M, Matsuyama R, Isoda N, Omori R, Yamamoto T, Makita K. (2024) Identifying effective biosecurity measures for preventing the intrusion of classical swine fever in pig farms in Japan: under the condition of absence/presence of observable infected wild boar. The 17th International Symposium on Veterinary Epidemiology and Economics. November 11-15, 2024, Sydney.
31. Mogano K., Sabeta C., Chirima GJ, Makita K. (2024) Ecological niche modelling based on ensemble algorithms to predict current potential distribution of wildlife rabies host in northern South Africa. The 17th International Symposium on Veterinary Epidemiology and Economics. November 11-15, 2024, Sydney.
32. Saensukjaroenphon K, Makita K. (2024) Food safety perception of stakeholders in broiler industry in Thailand. The 9th One Health Lecture series. 16-17 December, 2024, Thammasat University, Thailand.

33. Makita K. (2024) Next Steps of the FAVA Strategy to Tackle AMR 2026-2030. FAVA conference, 26 October, 2024, Daejeon, Korea (invited talk).
34. Makita K. (2024) Risk assessment trials for vegetables and aquaculture. WOAH Collaborating Centres consortium for Food Safety in Asia and Pacific Seminar Series 2023 Session 3 'Approaches and research to reduce antimicrobial use'. 23 January, 2024, online.
35. Usui M. (2024) Current status of animal-origin antimicrobial-resistant bacteria from a One Health perspective. The 4th Joint Meeting of Veterinary Science in East Asia's. 8 September, 2024. Obihiro, Japan.
36. Usui M. (2024). Models of Surveillance: Implementation in Livestock and Companion Animals, and Trials in Environmental and Aquatic Animals. AMR workshop in Brunei. 24 September. 2024, online.
37. Usui M. (2024). Reducing the antimicrobial use in animal production. Tokyo University and WOAH joint symposium. 11 October. 2024. Tokyo, Japan.
38. Fukumori, R, Nakayama, T, Hirose, M, Norimura, I, Izumi, K, Shimada, K, Mineo, H, Steele, M. A, Gondaira, S, Higuchi., H, Watanabe, T, Ueda, H, Sano, T, Chisato., K, Oikawa, S. (2024) Effects of amount of lactose in milk replacer on gastrointestinal permeability and hepatic inflammatory-related mRNA expression in dairy calves. International Symposium on Ruminant Physiology 2024 August. Chicago, USA
39. Fukumori R, Shoji J, Gondaira S, Oikawa S. (2024) Association of milk de novo fatty acid proportion with productivity and plasma IGF-1 and GLP-1 concentrations in dairy cows at the first postpartum week. ADSA annual meeting 2024 June. Florida, USA.
40. Shimada, K, Harada, R, Sato, H, Fukumori, R, Steele, M. A, Izumi, K. (2024) The effects of transition milk replacers with different IgG levels on growth performance of neonatal dairy calves. ADSA annual meeting 2024 June, Florida USA.

c) National conferences:
46
1. Ken Lee (February 2024) Enhancing the Synergy Between Science & Technology for Safeguarding Food Security and Safety in Singapore. Raffles Science Symposium 2024. Oral
2. Joanne Chan (June 2024) Per- and Polyfluoroalkyl Substances (PFAS) in the Food Chain. Singapore International Water Week. Oral
3. Tan Li Kiang (July 2024) GMO/Ged food crops: Risk assessment and regulations. Singapore GMAC Event. Oral
4. Raymond Shi (August 2024) Occurrence and Dietary Exposure of 3-MCPD Esters and Glycidyl Esters in Domestically and Commercially Prepared Food in Singapore. Singapore International Food Forum 2024. Oral
5. Sim Kae Hwan (August 2024) A metagenomics-based workflow for the detection and genomic characterization of GBS in raw freshwater fish. Singapore International Food Forum 2024. Oral
6. Ivan Zwe (August 2024) A Genomics Approach to Enhancing Risk Assessment of Staphylococcus aureus in Ready-to-Eat (RTE) Food. Singapore International Food Forum 2024. Oral
7. Tan Li Kiang (August 2024) Risk Assessment and Genomic Analysis of Microbiological Hazards in Infant Food. Singapore International Food Forum 2024. Poster
8. Wang Yanwen (August 2024) Current risk assessment and management approaches in ensuring the food safety of GM crops. Singapore International Food Forum 2024. Poster
9. Li Xin (August 2024) Proteomics-based sequence similarity analysis on the allergenome of insects consumed in parts of Southeast Asia. Singapore International Food Forum 2024. Oral
10. Wan Ling (August 2024) Identification and Characterisation of the Source of Mercury Contamination on a Commercial Vertical Indoor Farm Production System Incorporated with LED Lights. Singapore International Food Forum 2024. Oral
11. Ignatius Lim (August 2024) Occurrence and Dietary Exposure of Per- and Polyfluoroalkyl Substances (PFAS) in Commonly Consumed Food in Singapore. Singapore International Food Forum 2024. Poster
12. Yai Foong Chew (August 2024) Determination of Methenamine in Egg by Ultrahigh-Performance Liquid Chromatography - High Resolution Tandem Mass Spectrometry. Singapore International Food Forum 2024. Poster
13. Ong How Chee (August 2024) Singapore's Regulatory Framework for Novel Foods. SFA Food Safety R&D Workshop. Oral
14. Er Jun Cheng (November 2024) Singapore's Approach to Safety Assessment and Considerations for Cultivated Meat Cell Line Development. Regulators' Forum. Oral
15. The 20th Japanese Society of Neurogastroenterology Public Lecture 'Our health science starts from the intestines - intestinal bacteria and intestinal immunity' - Chair: Masatoshi Hori, Speakers: Kazuhiro Hirayama 'Types and functions of intestinal bacteria - Why is intestinal flora important for our health? 'Haruyo Nakajima-Adachi 'The impact of food on immune function - Including food allergies' -

16. "Kosuke Nishitsuji, Kohei Soga, Ryo Isogaki, Tomohiro Hoshino, Shigeru Tsunoda, Kazuhiro Hirayama, Satoshi Hachimura, Haruyo Nakajima-Adachi. 'The effect of intestinal bacteria on bone mass and bone immune response in a gastrointestinal allergy model' 2024 Annual Meeting of the Japanese Society of Bioscience, Biotechnology, and Agricultural Chemistry March 26th*

17. Tomohiro Hoshino, Kohei Soga, Kosuke Nishitsuji, Isogaki Ryo, Satoshi Hachimura, Haruyo Nakajima-Adachi 'Under food allergy conditions, CD4+ regulatory T cells show different responses in bone and intestine. CD4+regulatory T cell shows different responses in bone and intestine under food-allergic condition' 2024 Annual Meeting of the Japanese Society of Bioscience, Biotechnology, and Agricultural Chemistry March 26th*

18. Yuko Watanabe, Masako Toda, Satoshi Hachimura, Haruyo Nakajima-Adachi "Allergy recurrence becomes severe when undenatured egg white is ingested during the rest period after oral tolerance induction by long-term ingestion of heated egg white" 34th Annual Meeting of the Japanese Maillard Society (LPS) October 12

19. Kosuke Nishitsuji, Tomohiro Hoshino, Ryo Isogaki, Arisa Yoshida, Satoshi Hachimura, Haruyo Adachi (Nakajima) "The relationships between allergic responses and gut microbiome in gastrointestinal allergy models" food-allergic enteropathy model mouse 20th Anniversary Meeting of Japanese Association for Food Immunology (JAFI 2024) December 2-3, 2024*

20. Yoshida Arisa, Wang YIMEI, Soga Kohei, Nishitsuji Kosuke, Kodera Shuhei, Isogaki Ryo, Hoshino Tomo, Baba Yoshiyo, Lei Chenxu, Katakura Yoshinori, Totsuka Mamoru, Hisatsune Tatsuhiro, Nakajima-Adachi Haruyo, Hachimura Satoshi 'Effects of anserine on inflammation in intestinal epithelial cells and macrophages' 20th Anniversary Meeting of Japanese Association for Food Immunology (JAFI 2024) December 2-3, 2024*

21. Kodera Shuhei, Mizobuchi Kyoko, Soga Kohei, Fujioka Ikumi, Uchida Kenji, Satsuo Hideo, Nakajima-Adachi Haruyo, Hachimura Satoshi 'Lactococcus lactis subsp. Mechanism of IgA antibody production enhancement by C. cremoris YRC3780.' 20th Anniversary Meeting of Japanese Association for Food Immunology (JAFI 2024) December 2-3, 2024*

22. Hori Masatoshi, Mihara Daiki, Goto Momo, Tokunaga Yazuki, Chaen Takashi, Kurosawa Tamaki, Kitajima Satoshi 'Biohazard research on cell culture foods 2: Influence of aging on gene expression in cultured cells and genetic changes in the synthesis/degradation system of harmful substances in the body due to subculture.' 51st Annual Meeting of the Japanese Society of Toxicology 2024.7.3-5 (Fukuoka International Congress Center) (Fukuoka)

23. Hori Masatoshi 'Health foods from the perspective of ELSI-S' 19th Workshop of the Society of Functional Food 2024.8.23 Juntendo University Ochanomizu Center Building Peiwen Shi, Zhuoyu Yang, Kaiting Wang, Yuriko Enomoto, Min Ma, Masayoshi Kuwahara, Junyou Li. Detection the Infection Route of Ascaris Suum to Eradicate Recurrent Ascaris infection in Pig Production. ISSN 1342-4688, Page219, 2024.9.16-19, The 132th Japan Society for Livestock Science (English Presentation Award).

24. Kaiting Wang, Zhuoyu Yang, Peiwen Shi, Yuriko Enomoto, Min Ma, Masayoshi Kuwahara, Junyou Li. Study of Tribolium castaneum in pig feed. ISSN 1342-4688, Page219, 2024.9.16-19, The 132th Japan Society for Livestock Science (English Presentation Award).

25. Takumi Makino, Hidetoshi Sakurai, Ryuichiro Sato, Yoshio Yamauchi. Development of a method for inducing myocyte maturation using human iPS cell-derived skeletal muscle cells and mouse myoblasts. The 100th Annual Meeting of the Japan Society of Bioscience, Biotechnology, and Agrochemistry. 2024. (Tokyo)

26. Liyang N, Zhao X, Sakurai H, Sato R, Yamauchi Y. Role of the mevalonate pathway in the regulation of selective autophagy and atrophy in skeletal muscle.The 2024 Annual Meeting of Japan Society for Bioscience, Biotechnology, and Agrochemistry. 2024. (Tokyo)

27. Liyang N, Zhao X, Sakurai H, Sato R, Yamauchi Y. The mevalonate pathway regulates the selective autophagy involved in statin-related myotoxicity. The 97th Annual Meeting of the Japanese Biochemical Society. 2024. (Yokohama)

28. Mio Ono, Mizuki Nishimura, Hodaka Saito, Wakana Tachiura, Ryuichiro Sato, Yoshio Yamauchi, Effect of oxysterol hydroxylation sites on ABCA1-dependent oxysterol efflux. The 97th Annual Meeting of the Japanese Biochemical Society. 2024. (Yokohama)

29. Matsuyama R, Osa Y, Tachiki Y, Kato T, Asakawa M. Developing a web tool for the data accumulation and communication regarding wildlife rescue data. The 30th Annual Meeting of Japanese Society of Zoo and Wildlife Medicine, 15 December, 2024, Kunigami-gun, Japan.

30. Matsuyama R, Omori R, Kato T, Tachiki Y, Asakawa M, Osa Y, Suzuki K. Estimation of population dynamics and infectious disease epidemics in wildlife populations using carcass survey records: a case study of sarcoptic mange in the Japanese raccoon dog population in Southern Wakayama Prefecture. 10 September, 2024, Obihiro, Japan.

31. Matsuyama R, Kido N, Omori R. Estimatiing the dynamics of a raccoon dog population using animal rescue data. 71st Annual Meeting of Ecological Society of Japan, 17 March, 2024. Yokohama, Japan.

32. Yonezawa Y, Nakagami T, Tsutsumi N, Momma N, Matsuyama R, Makita K. (2024) Analysis of association between PRRS inactivated vaccination and mortality of fattening pigs: A case study in a pig farm. Conference of Japan Society of Veterinary Science, 10 September,

2024, Obihiro, Japan.
33. Asai T, Matsuyama R, Sugiyama M, Morimoto M, Makita K. (2024) Prevalence of antimicrobial resistant bacteria in shika deer in Miyajima. Conference of Japan Society of Veterinary Science, 11 September, 2024, Obihiro, Japan.
34. Makita K, Matsumoto F, Kohara J, Matsuyama R, Omori R. (2024) Investigation into mode of bovine leukemia virus transmission using age stratified analysis for two dairy farms. Conference of Japan Society of Veterinary Science, 10 September, 2024, Obihiro, Japan.
35. Makita K. (2024) Assessment of echinococcosis risk through epidemiological approach -estimation of fox feces density using spatio-temporal analysis-. The 15th symposium of Society of Helminth Research. 19 August, 2024, Lake Shikotsu, Hokkaido, Japan. (invited talk)
36. Matsumoto F, Yoshioka T, Kohara J, Matsuyama R, Makita K, Omori R. (2024) Quantification of within-farm vertical and horizontal transmission of bovine infectious leukemia virus using mother-calf pair analysis. The 63rd Japan Society of Veterinary Epidemiology conference, 17 March, 2024, Tokyo, Japan.
37. Yoshida M, Ukita M, Matsuyama R, Sakai M, Ishikawa M, Matsuoka T, Tamura Y, Makita K. (2024) Factors associated with the use of important human antibiotics in companion animal clinics. The 63rd Japan Society of Veterinary Epidemiology conference, 17 March, 2024, Tokyo, Japan.
38. Ukita M., Yasuda A., Kikuchi E., Makita K. (2024) Economic impact of highly pathogenic avian influenza outbreaks in Japan during the 2022-23 season. The 63rd Japan Society of Veterinary Epidemiology conference, 17 March, 2024, Tokyo, Japan.
39. Matsuyama R, Uchida L, Chisato K, Ukita M, Fukuda A, Gondaira S, Fukumori R, Usui M, Higuchi H, Oikawa S, Muramatsu Y, Makita K. (2024) Comparing the educational effectiveness between the on-site hands-on training and the virtual reality training regarding meat inspection of cattle among veterinary students. The 63rd Japan Society of Veterinary Epidemiology conference, 17 March, 2024, Tokyo, Japan.
40. Makita K. (2024) Current situations of veterinary epidemiology education in Japan, and the practice education in the selected areas of the world. In: Japanese Society of Veterinary Science Epidemiology Section Symposium "Veterinary epidemiology education in the global and One Health perspectives", 16 March, 2024.
41. Shimazaki H, Shimooka M, Vicencio VR, Muramatsu Y, Uchida L. (2024) The effects of the amino acid polymorphisms surrounding the N-linked glycosylation site of ZIKV E protein on the adaptation to mosquitoes. The 71st Annual Meeting of the Japanese Society for Virology, 5 November 2024, Nagoya, Japan.
42. Tomihisa A, Makita N, Vicencio VR, Muramatsu Y, Uchida L. (2024) Characterization and serological test of Aedes galloisi flavivirus (AGFV) and novel AGFV-like virus isolated from mosquitoes in Hokkaido. The 71st Annual Meeting of the Japanese Society for Virology, 5 November 2024, Nagoya, Japan.
43. Fukuda A, Nakajima C, Suzuki Y, Usui M. (2024) Mobile linezolid resistance genes in enterococci derived from livestock compost at Japanese farms. 97th Annual Meeting of the Japanese Society for Bacteriology, Poster, 6 March, 2024, Sapporo, Japan.
44. Kogure K, Fukuda A, Asai T, Usui M. (2024) Trial of sustainable antimicrobial resistance monitoring in domestically marketed fish in Japan. 167th Annual Meeting of the Japanese Society of Veterinary Science, Oral Presentation, 10 September, 2024, Obihiro, Japan.
45. Kobayashi M, Sugiura T, Fukuda A, Kudo H, Usui M. (2024) Exploration of probiotic candidate strains against uterine endometritis-causing bacteria in dairy cows. 167th Annual Meeting of the Japanese Society of Veterinary Science, Oral Presentation, 10 September, 2024, Obihiro, Japan.
46. Usui M. (2024) Understanding and controlling antimicrobial-resistant bacteria of animal origin through a One Health approach. 12th Annual Meeting of the Japanese DOHaD Society, Oral Presentation, 20 October, 2024, Sapporo, Japan.

d) Other (Provide website address or link to appropriate information):
7
1. One Health Intelligence Team (SFA: Panqin Cai, Lina Sabrina, Kyaw Thu Aung, Edward Lee, Yen Ching Lim, Stacy Khaw) (TBC July 2024): Prioritising Zoonotic Diseases for Multisectoral One Health Collaboration in Singapore – Workshop Summary. https://www.cdc.gov/one-health/php/prioritization/completed-workshops.html
2. Glendon Ong, Roshini Devi Mohan, Wei Ching Khor, Aung Kyaw Thu, Joanna Khoo (6 November 2024): One Health Report on Antimicrobial Utilisation and Resistance, 2021. NCID Website. https://www.moh.gov.sg/others/resources-and-statistics/one-health-report-on-antimicrobial-utilisation-and-resistance-2021
*3. Min MA, Yuriko ENOMOTO, Tomotsugu TAKAHASHI, Kazuyuki UCHIDA, James K. CHAMBERS, Yuki GODA, Daisuke YAMANAKA, Shin-Ichiro TAKAHASHI, Masayoshi KUWAHARA and Junyou LI *. Study of the Effects of Condensed Tannin Additives on the Health and Growth Performance of Early-Weaned Piglets. Animals 2024, 14(16), 2337; https://doi.org/10.3390/ani14162337 - 14 Aug 2024*

4. Makita K. contributed as a panel in the One Health scientific conference: International practices and lessons learned for Vietnam. 16 October, 2024 in Hanoi, Vietnam [https://www.ilri.org/knowledge/publications/one-health-scientific-conference-international-practices-and-lessons-0]
5. Makita K. (2024) Key features of animal brucellosis – implications on control and elimination. In: WOAH Regional Workshop on Zoonotic Tuberculosis and Brucellosis Control in the Asia Pacific. 25 September, 2024. Qindao, China. [https://rr-asia.woah.org/en/events/workshop-on-zoonotic-tuberculosis-and-brucellosis-control-in-the-asia-pacific/]
6. Uchida L. (2024) Meat hygiene inspection training at Rakuno Gakuen University and slaughter inspection training using VR teaching materials. Veterinary Public Health Seminar by Kamikawa Branch of Hokkaido Veterinary Medical Association. 16 August 2024. Hokkaido, Japan. [https://www.hokkaido-juishikai.jp/seminner/]
7. Kosenda K. (2024) Ultrasound imaging of cattle by portable device. Farm animal medicine seminar by Soya branch of Hokkaido Veterinary Medical Association. 9 August 2024. Hokkaido, Japan. [https://www.hokkaido-juishikai.jp/page/2/?post_type=seminner]

11. What have you done in the past year to advance your area of focus, e.g. updated technology?
NCFS
NCFS has strengthened its non-targeted food safety screening capability through the acquisition of an array of Orbitrap High Resolution Mass Spectrometry (HRMS) systems. These new testing facilities can help uncover unusual foodborne contaminants and proteins with allergenicity and other potential adverse health effects in novel food.
In the past year, we have also developed and enhance our inhouse bioinformatics capabilities for whole genome sequencing (WGS), which greatly improve the turnaround time for food poisoning investigation as well as strengthen the tracking and clustering of pathogen isolates from food safety regulatory surveillance and antimicrobial resistance (AMR) under the national one-health programme.
NCFS has also begun harnessing generative Artificial Intelligence (AI) to enhance data analysis for foodborne outbreak investigations. This enhances Singapore's ability to efficiently analyse common risk factors and root causes of foodborne outbreaks for future mitigation. Currently, we are developing Singapore's toxicology development roadmap to enhance the efficiency and accuracy of food safety assessment.

RCFS
Ministry of Health, Labor and Welfare Science Research Grant 2022-2024
Research into food hygiene hazards and risks through pioneering investigations and studies of cell cultured foods using food tech - Creation of risk profiles and verification and feedback using model cell experimental systems - Principal Investigator: Satoshi Kitajima Research Co-Investigator: Masatoshi Hori

RGU
RGU is in educational and research institute with the philosophy of Loves to God, People and Soil, and Healthy Soil, Healthy People. Based on the philosophy, researches associated with farm-to-fork and environment are going on.
At the farm level, RGU provided research outputs on epidemiology, AMR, herd health and diagnostic tools for farm animals including aquaculture to facilitate safe and healthy animal production. Rapid and multiple diagnostic tools on AMR bacteria and mastitis such as Mycoplasma bovis became available.
For food safety, quantitative release assessments of AMR bacterial on vegetable of bovine origin, mcr-gene in pigs, and AMR in aquaculture have been conducted. Virtual reality educational tool was developed and is available in market.
Infectious disease modelling and molecular analysis in livestock animals and wildlife elucidated the dynamics of disease spread and maintenance.
JICA/AMED SATREPS project 'Co-designing Neglected Zoonosis Control through One Health, Education, and Public-Private partnerships' was started in Tanzania for brucellosis and zoonotic TB control.

12. Additional comments regarding your report:
Reference to TOR 4 and 5, NCFS did not maintain a network with other WOAH Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated (for the same specialty and in other disciplines) to coordinate scientific and technical studies.

We are the only CC for Food Safety in the region. The cooperation among other CCs is limited as the majority of these WOAH CCs are focusing on animal health. Despite the stated limitation, NCFS continues to have other working initiatives that are contributing significantly to the region.

NCFS actively contributes under our capacity as the ASEAN Reference Laboratories for the various contaminants (Mycotoxins, Pesticide Residues, Environmental Contaminants, Marine Biotoxins and Scombrotoxins) towards the ASEAN region.

NCFS is also an active partner with the World Health Organisation (WHO), Food and Agriculture Organization of the United Nations (FAO), United States of America Food and Drug Administration (US FDA), United States Department of Agriculture (USDA), Food Standards Australia New Zealand (FSANZ) as well as other risk assessment bodies such as the German Federal Institute for Risk Assessment (BfR) and the Hong Kong Food and Environmental Hygiene Department.