OIE Collaborating Centres Reports Activities

Activities in 2018

This report has been submitted : 2019-01-22 06:43:15

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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

Training, capacity building	
Title of activity	**Scope**
Training/ Capacity Building	A FAO ATLASS assessor training with the aim to introduce the objectives of ATLASS, train participants on the applications of the tool for assessing AMR surveillance systems and conduct ATLASS mission was organised from the 7-10 May 2018, Singapore.
Training/ Capacity Building	An ASEAN-EU Joint Training Workshop on GMO Quantitative Detection" with the aim to train participants on how to perform GMO quantification for samples and analyse results was organised from the 25-27 Jun 2018, Singapore.
Training/ Capacity Building	The 15th Meeting of the ASEAN Genetically Modified Food Testing Network with the aim to build up GM food testing capabilities within ASEAN region and to harmonize technical approaches at the regional level was organised from the 28-29 Jun 2018, Singapore.
Zoonoses	
Title of activity	**Scope**
Training/ Zoonoses	The Sixth ASEAN Laboratory Directors' Forum was organised which focused on progress of Regional Laboratory Network Collaborative Matrix, the ASEAN Coordinating Centre on Animal Health and Zoonosis,and regional efforts to combat antimicrobial resistance from the 1-2 Nov 2018, Singapore.
Diagnosis, biotechnology and laboratory	
Title of activity	**Scope**
Training/ Laboratory	A training workshop on the detection of total mercury for fish product by cold vapour AAS was conducted to provide regional food safety capacity building on laboratory competence was organised from the 5-7 Sep 2018, Singapore.
Food safety	
Title of activity	**Scope**

Training/ Food Safety	A training workshop on “Applications for Microbiological Typing and Antimicrobial Resistance” which focused on use of Next Generation Sequencing in Microbiological Typing and Antimicrobial Resistance for use in Food Safety and Public Health was organised from 5-9 Feb 2018, Singapore.
Training/ Food Safety	An ASEAN Regional Training on Pesticide Residues Analysis workshop with the aim to strengthen the laboratory testing capabilities of developing countries Asia and South Pacific was organised from 27-29 Mar 2018, Singapore.
Training/ Food Safety	A training workshop on analysis of indicator PCBs in various food matrices covering sample preparation using Accelerated Solvent Extractor (ASE) and instrumentation using GC-MSMS was organised from the 15-17 Oct 2018, Singapore

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
APEC Food Safety Modernisation Framework	Contribute towards the development of a framework document to assist APEC economies to work towards modernizing their food control systems to enhance food safety to facilitating trade – development is led by Food Standards Australia New Zealand.	☐Surveillance and control of animal diseases ☒Food safety ☐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

Singapore VPHC/University of Tokyo/Rakuno Gakuen University, as OIE Joint Collaborating Centre for Food Safety	Singapore	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Workshop on Applications for Microbiological Typing and Antimicrobial Resistance on the 5 Feb.
IAEA	Singapore	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	“Regional Asia-Pacific workshop on Proper Sampling & Statistics for Food Safety Laboratory” from the 26-30 Mar.
Codex Committee on Contaminants in Food (CCCF)	Netherlands	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East	Codex meeting on Contaminants in Food from the 12-16 Mar.
Codex Committee on Pesticide Residues (CCPR)	China	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Codex meeting on Pesticide Residues (CCPR) from the 9-14 Apr.
Codex Committee on Methods of Analysis and Sampling (CCMAS)	Hungary	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East	Codex meeting on Methods of Analysis and Sampling (CCMAS39) from the 7 - 11 May.
Ghent University	Belgium	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East	“8th International Symposium on Hormone and Veterinary Drug Residue Analysis” from the 21-25 May.
FAO/IAEA	South Africa	☒Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East	3rd Research Coordination Meeting (RCM) for the FAO/IAEA Coordinated Research Project (CRP): “Development and Strengthening of Radio-Analytical and Complementary Techniques to Control Residues of Veterinary Drugs and Related Chemicals in Aquaculture Products”, from the 30 May to 4 Jun and African Food Safety Workshop, 4-8 Jun.
Bureau of Quality Control of Livestock Products, Thailand	Thailand	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Workshop on Non-Steroidal Anti-Inflammatory Drug Residues in Animal Products from the 16 – 21 Jul.

APEC	Australia	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	APEC Suite of Meeting on Pesticide MRL Harmonisation from the 8-12 Oct.

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
Department of Science Service, Thailand	Thailand	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	"Food Contact Material (FCM) Training focusing on Phthalates in food and FCM" from the 19-23 Mar.
WHO	Singapore	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	WHO Joint External Evaluation (JEE) Assessment from the 16-20 Apr, Singapore. The JEE is one of the core components of the International Health Regulations (2005) (IHR) monitoring and evaluation legal framework designed to assess IHR required capacities to detect, assess, report and respond to acute public health events and emergencies.
National Veterinary Assay Laboratory	Japan	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Regional Short-term Training on AMR from the 16-18 Oct.
Onderstepoort Veterinary Research Institute, OIE Reference on rabies	Republic of South Africa	☒Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East	Spatio-temporal analysis of human and animal rabies in South Africa, jointly conducted with Rakuno Gakuen University.
National Veterinary Assay Laboratory, OIE CC	Japan	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Risk assessment of mcr-mediated colistin resistant Escherichia coli in pigs, commissioned by Food Safety Commission of Japan.

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: 135
b) Seminars: 345
c) Hands-on training courses: 12
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
c	Expert from the Ministry of Agriculture, Livestock and Irrigation (Myanmar), was attached to OIE Collaborating Centre, Singapore for GMO training from 8 – 19 January 2018.	Myanmar	1
a	Expert from Saudi Food and Drug Authority (SFDA) visited OIE Collaborating Centre, Singapore to gain more understanding in the areas of risk assessment and food laboratory on 30 January 2019.	Saudi Arabia	1
a	Expert from Indonesian National Police, Department of Police Medicine visited OIE Collaborating Centre, to gain more understanding in the area of the food microbiology testing on 31 January 2018.	Indonesia	1
a	Delegates from WHO visited OIE Collaborating Centre, Singapore on 17 April 2018 as part of the WHO-Singapore Joint External Evaluation (JEE) Programme to visit the National Laboratory System in Singapore.	Singapore	4
a	Expert from Administration for the State Council of China visited OIE Collaborating Centre, Singapore on 26 June 2018 to have an overview on how the laboratories support AVA’s food control system.	China	1
a	Delegates from Bangladesh as part of their in-house programme on Public Private Partnership organised by Singapore Institute of Management visited OIE Collaborating Centre, Singapore on the 4 July 2018.	Bangladesh	8

a	Delegates from Indonesia visited OIE Collaborating Centre, Singapore on 24 July 2018.	Indonesia	15
a	Delegates from the Ministry of Research, Technology and Higher Education, Indonesia visited OIE Collaborating Centre, Singapore on 25 September 2018.	Indonesia	20
a	Delegates from the Taiwan's Food and Drug Administration visited OIE Collaborating Centre, Singapore on 1 October 2018.	Taiwan	4
c	Experts from Department of Scientific Services, Ministry of Health visited OIE Collaborating Centre, Singapore from the 18-19 October 2018.	Brunei Darussalam	2
a	Delegates from 6th ASEAN Laboratory Directors' Forum meeting visited OIE Collaborating Centre, Singapore on 31 October 2018.	Brunei, Cambodia, Indonesia, Japan, Korea, LAO PDR, Malaysia, Mongolia, Myanmar, Philippines, Germany, Italy and Thailand.	30
a	Delegates from French Agency for Food, Environment, Occupational Health & Safety (ANSES) visited OIE Collaborating Centre, Singapore on 7 November 2018.	France	5
a	Delegates from China, Guangxi Food and Drug Administration Bureau visited OIE Collaborating Centre, Singapore on 15 November 2018.	China	12
b	Delegates from Singapore attended the Scientific Seminar by Dr Amadeo from European Union Reference Lab for Pesticides Residues in fruits and vegetable organised by OIE Collaborating Centre, Singapore on 29 November 2018.	Singapore	30
a	Delegates from Bangladesh as part of their Bangladesh Technical and Vocational Education and Training visited OIE Collaborating Centre, Singapore on the 13 December 2018.	Bangladesh	20
a	Meeting on spatio-temporal analysis of human and animal rabies at Onderstepoort Veterinary Research Institute, South Africa (RGU)	Africa	10
b	Lecture on mental health management at the outbreaks of animal and zoonotic infectious disease at the national transboundary diseases management meeting in Japan (RGU)	Japan	200
b	One Health lecture series on antimicrobial resistance at Thammasat University (RGU)	Thailand	100
b	Challenges in the dairy interventions of JICA Safe Milk project (RGU)	Uganda	15

c	Dairy hygiene, reproduction and nutrition management, and east coast fever control (RGU)	Uganda	5
c	Veterinary epidemiology and spatial analysis training course at RGU	Africa	4
d	Japan Veterinary Association training on diagnostic of zoonoses at RGU	Vietnam	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?

No

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: 54

1. Siew Hoon Sim, Catherine Ee, Yunn Hwen Gan, Dongling Wang, Victor Wee, Yian Kim Tan, Michelle Su, Janet Seok, Sian Foong Ling, Brian Tan, Agnes Ye. Patrick Bay, Wai Kwan Wong, Charlene Fernandez, Shangzhe Xie, Praveena Jayarajah, Tasha Tahar, Pei Yee Oh, Sonja Luz, Jaime Chien, Thuan Tong Tan, Louis Yi, Dale Fisher, Yichun Liu, Jimmy Loh, Gladys Tan et.al, 2018. Melioidosis in Singapore: Clinical, Veterinary, and Environmental Perspectives. Tropical Medicine and Infectious Disease. 2018, 3,31.
2. The Validation of the VereBeef ™ Detection Kit Certificate for AOAC Research Institute, AOAC Performance Tested Methods SM 011801, AOAC publication {JAOAC article 18-0213).
3. Ridhwan Yusoff & Luong T. H. Nguyen & Paul Chiew & Zheng Ming Wang & Kee Woei Ng (2018) Comparative differences in the behavior of TiO2 and SiO2 food additives in food ingredient solutions. J Nanopart Res 20:76.
4. Ridhwan Yusoffa, Mustafa Hussain Kathawalaa, Luong T.H. Nguyena, Magdiel I. Setyawatia, Paul Chiewb, Yuansheng Wub, Ai Lee Ch'ngb, Zheng Ming Wang, Kee Woei Ng, (2018) Biomolecular interaction and kinematics differences between P25 and E171 TiO2 nanoparticles. NanoImpact 12: 51–57.
5. Sakura Arai, Hyunjung Kim, Takayasu Watanabe, Mari Tohya, Eriko Suzuki, Kasumi Ishida-Kuroki, Fumito Maruyama, Kazunori Murase, Ichiro Nakagawa, Tsutomu Sekizaki. Assessment of pig saliva as a Streptococcus suis reservoir and potential source of infection on farms by use of a novel quantitative polymerase chain reaction assay. Am J Vet Res, 79(9):941-948, 2018 doi: 10.2460/ajvr.79.9.941.
6. Yamada R, Tien LHT, Arai S, Tohya M, Ishida-Kuroki K, Nomoto R, Kim H, Suzuki E, Osawa R, Watanabe T, Sekizaki T. Development of PCR for identifying Streptococcus parasuis, a close relative of Streptococcus suis. J Vet Med Sci. 80(7):1101-1107, 2018 Jun 6. doi: 10.1292/jvms.18-0083.
7. Tohya M, Sekizaki T, Miyoshi-Akiyama T. Complete genome sequence of Streptococcus ruminantium sp. nov. GUT-187T (=DSM 104980 T =JCM 31869 T), the type strain of S. ruminantium, and comparison
8. with genome sequences of S. suis strains. Genome Biol Evol. 10(4):1180-1184, 2018 Apr 6.
9. Cassani, G., Puggioni, A., Rossi, A., Colombo, A., Onodera, T., Ferrannini, E., and Toniolo, A.: The diabetes pandemic and associated infections: suggestions for clinical microbiology. Rev. Med. Virol., 29, 2018.
10. Onodera, T., and Sakudo, A.: Introduction to current progress in advanced research in prions, Prions: Current Progress in Advanced Research, Caister Academic Press, Norfork, UK, 2018.
11. Onodera, T., Nishimura, T., Sugiura, K., Matsuda, S., and Sakudo, A.: Function of cellular prion protein (update), Prions: Current Progress in Advanced Research, Caister Academic Press, Norfork, UK, 2018.
12. Ano, Y., Sakudo, A., and Onodera, T.: Effect of microglial inflammation in prion disease (update), Prions:

Current Progress in Advanced Research, Caister Academic Press, Norfork, UK, 2018.
13. Onodera, T., Nishimura, T., and Sugiura, K.: Future perspective in prion research, Prions: Current Progress in Advanced Research, Caister Academic Press, Norfork, UK, 2018.
14. Kumagai, S., Daikai, T., and Onodera, T.: Bovine Spongiform Encephalopathy – A revew from the perspective of food safety. Food Safety, 2018.
15. Onodera, T., Sugiura, K., Sakudo, S.: The history of chronic wasting disease. Japanese Journal of Veterinary History. 55: 12-17. 2018.
16. Matsuda, M., Isomura, R., Kwan, N.C.L., Kawanishi, M., Ozawa, M., Kijima, M., Sugiura, K. Evaluating the antimicrobial use in food-producing animals in Japan using the animal level of exposure for antimicrobials (ALEA). Jap Journal of Animal Hygiene. 43: 161-168, 2018
17. Inoue M, Kwan NCL, Sugiura K.Estimating the life expectancy of companion dogs in Japan using pet cemetery data. J Vet Med Sci. 80:1153-1158. 2018.
18. Sugiura K, Haga T. A rapid risk assessment of African swine fever introduction and spread in Japan based on expert opinions. J Vet Med Sci. 80:1743-1746. 2018.
19. Isomura R, Matsuda M, Sugiura K. An epidemiological analysis of the level of biosecurity and animal welfare on pig farms in Japan and their effect on the use of veterinary antimicrobials. J Vet Med Sci.80:1853-1860. 2018.
20. Kwan NCL, Yamada A, Sugiura K. Benefit-cost analysis of the policy of mandatory annual rabies vaccination of domestic dogs in rabies-free Japan. PLoS One. 17;13(12):e0206717. doi: 10.1371/journal.pone.0206717. 2018.
21. Yamada A, Makita K, Kadowaki H, Ito N, Sugiyama M, Kwan NCL, Sugiura K. A comparative review of prevention of rabies incursion between Japan and other rabies-free countries or regions. Jpn J Infect Dis. 2018 Dec 25. doi: 10.7883/yoken.JJID.2018.431.
22. Sato A., Sarentonglaga B., Ogata K., Yamaguchi M., Hara A., Atchalalt K., Sugane N., Fukumori R., Nagao Y., 2018. Effects of insulin-like growth factor-1 on the in vitro maturation of canine oocytes. Journal of Reproduction and Development 64:83-88.
23. Hara A., Abe T., Hirao A., Sanbe K., Ayakawa H., Sarantonglaga B., Yamaguchi M., Sato A., Khurchabilig A., Ogata K., Fukumori R., Sugita S., Nagao Y., 2018. Histochemical properties of bovine and ovine mammary glands during fetal development. Journal of Veterinary Medical Science 80:263-271.
24. Fukumori R., Masuda Y., Takeuchi A., Yanai R., Atchalalt K., Sarentonglaga B., Ogata K., Yamaguchi M., Hara A., Satoh A., Sugino T., Nagao Y., 2018. Duodenal infusion of fatty acids differentially affects plasma glucagon-like peptide-1 and ghrelin concentrations in sheep. Journal of Animal Science 96:1889-189
25. Yamaguchi M., Fukumori R., Sarentonglaga B., Ogata K., Hara A., Sato A., Maeda I., Azuma N., Nagao Y., 2018. Effects of pasture intake on immunoglobulin concentrations in the milk of dairy cows. Milk Science 67(3) (in press)
26. Masuda Y., Fukumori R., Yanai R., Takeuchi A., Sarentonglaga B., Sugino T., Nagao Y., Effects of supplementation with calcium salts of medium-chain fatty acids on the plasma metabolic hormone concentrations in weaning beef calves. Animal Behaviour and Management (in press).
27. Dang-Xuan S, Nguyen-Viet H, Pham-Duc P, Unger F, Tran-Thi N, Grace D, Makita K. (2019) Risk factors associated with Salmonella spp. prevalence along smallholder pig value chains in Vietnam. International Journal of Food Microbiology 290, 105-115.
28. Yamada A, Makita K, Kadowaki H, Ito N, Sugiyama M, Kwan N, Sugiura K. (2018) A comparative review of prevention of rabies incursion between Japan and other rabies-free countries or regions. Japanese Journal of Infectious Diseases (e-published ahead of print)
29. Dang-Xuan S, Nguyen-Viet H, Pham-Duc P, Grace D, Unger F, Nguyen-Hai N, Nguyen Tien T, Makita K. (2018) Simulating cross-contamination of cooked pork with Salmonella enterica from raw pork through home kitchen preparation in Vietnam. International Journal of Environmental Research and Public Health 15, 2324.
30. Nakada S, Kohara J, Makita K. (2018) Estimation of circulating bovine leukemia virus levels using conventional blood cell counts. Journal of Dairy Science 101(12), 11229-36.
31. Sirma A, Lindahl JF, Makita K, Senerwa D, Mtimet N, Kang'ethe EK, Grace D. (2018) The impacts of aflatoxin standards on health and nutrition in sub-Saharan Africa: The case of Kenya. Global Food Security 18: 57-61.
32. Kothalawala KACHA, Makita K, Kothalawala H, Jiffry AM, Kubota S, Kono H. (2018) Knowledge, attitudes, and practices (KAP) related to brucellosis and factors affecting knowledge sharing on animal diseases: a cross-sectional survey in the dry zone of Sri Lanka. Tropical Animal Health and Production 50(5): 983-989.
33. Poolkhet C, Makita K, Thongratsakul S, Leetehapongsathon K. (2018) Exponential random graph models to evaluate the movement of backyard chickens after the avian influenza crisis in 2004–2005, Thailand. Preventive Veterinary Medicine 158: 71-77.
34. Asakura S, Makingi G, Kazwala R, Makita K. (2018) Herd-level risk factors associated with Brucella sero-positivity in cattle, and perception and behaviours on the disease control among agro-pastoralists in Tanzania. Acta Tropica 187: 99-107.
35. Asakura S, Makingi G, Kazwala R, Makita K. (2018) Brucellosis risk in urban and agro-pastoral areas in Tanzania. EcoHealth 15, 41-51.
36. Kadowaki H, Duc PP, Sato K, Phuong PTM, Hagiwara K, Makita K. (2018) Socio-economic factors associated with voluntary rabies control measures in Vietnam. Preventive Veterinary Medicine 157: 105-114.
37. Kadowaki H, Hampson K, Tojinbara K, Yamada A, and Makita K. (2018) The risk of rabies spread in Japan: a

mathematical modelling assessment. Epidemiology and Infection 1-8.
https://doi.org/10.1017/s0950268818001267
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40. Noda, J., Izumi, K., and Tamura, Y., 2018. Investigation of chromated copper arsenate-treated waste wood used for bedding material in the Hokkaido area. Japanese Journal of Veterinary Research, 66(1): 57-62.
41. Minamoto, Y., Nakamura, K., Wang, M., Kawai, K., Ohara, K., Noda, J., Davaanyam, E., Sugimoto, N., and Kai, K., 2018. Large-Scale Dust Event in East Asia in May 2017:Dust Emission and Transport from Multiple Source Regions. SOLA, 14: 33-38.
42. Teraoka, H., Miyagi, H., Haraguchi, Y., Takase, K., Kitazawa, T., and Noda, J., 2018. Contamination Status of Seven Elements in Hooded Cranes Wintering in South-West Kyushu, Japan: Comparison with Red-Crowned Cranes in Hokkaido, Japan. Arch Environ Contam Toxicol. 75(4):557-565.
43. Okubo, T., Ae, R., Noda, J., Iizuka, Y., Usui, M., Tamura, Y., 2018. Detection of the sul2-strA-strB gene cluster in an ice core from Dome Fuji Station, East Antarctica. J Glob Antimicrob Resist. S2213-7165(18)30221-2.
44. Shimamori, T., Tsukano, K., Sera, K., Noda, J., and Suzuki, K., 2018. Sequential changes in serum zinc concentrations in calves with experimentally induced endotoxin shock measured by the particle-induced X-ray emission method. The Journal of Veterinary Medical Science, in press.
45. Takamatsu, Y., Uchida. L., Raekiansyah. M., Luz. M.A., Morita. K., Hayasaka. D., 2018. A Simple Mechanism Based on Amino Acid Substitutions is not a Critical Determinant of High Mortality of Japanese Encephalitis Virus Infection in Mice. Viruses 10(2). pii: E62.
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47. Yu, F., Adungo. F., Konongoi. S.L., Inoue. S., Sang. R., Ashur. S., Kwallah. A.O., Uchida. L., Buerano. C.C., Mwau. M., Zha. Y., Nie. Y., Morita. K., 2018. Comparison of enzyme-linked immunosorbent assay systems using rift valley fever virus nucleocapsid protein and inactivated virus as antigens. Virol J 15(1):178.
48. Fujiki, J., Nakamura, T., Furusawa, T., Ohno, H., Takahashi, H., Kitana, J., Usui, M., Higuchi, H., Tanji, Y., Tamura, Y., Iwano, H., 2018. Characterization of the Lytic Capability of a LysK-Like Endolysin, Lys-phiSA012, Derived from a Polyvalent Staphylococcus aureus Bacteriophage. Pharmaceuticals (Basel, Switzerland) 11.
49. Fukuda, A., Sato, T., Shinagawa, M., Takahashi, S., Asai, T., Yokota, S.I., Usui, M*., Tamura, Y., 2018. High prevalence of mcr-1, mcr-3 and mcr-5 in Escherichia coli derived from diseased pigs in Japan. International journal of antimicrobial agents 51: 163-164.
50. Iwano, H., Inoue, Y., Takasago, T., Kobayashi, H., Furusawa, T., Taniguchi, K., Fujiki, J., Yokota, H., Usui, M., Tanji, Y., Hagiwara, K., Higuchi, H., Tamura, Y., 2018. Bacteriophage PhiSA012 Has a Broad Host Range against Staphylococcus aureus and Effective Lytic Capacity in a Mouse Mastitis Model. Biology 7.
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54. Sato, T., Usui, M., Maetani, S., Tamura, Y., 2018. Prevalence of methicillin-resistant Staphylococcus aureus among veterinary staff in small animal hospitals in Sapporo, Japan, between 2008 and 2016: A follow up study. Journal of infection and chemotherapy : official journal of the Japan Society of Chemotherapy 24: 588-591.

b) International conferences: 34

1. Ng WL, Goh JR G., Bay LJ, Ang TH, Kong PY K., Chew CF P., Koh SP, Ch'ng AL, Phang CS H., Chiew KT P. Differentiation of the Geographical Origin of Dairy Milk Sold in Singapore Using Stable Isotope Signatures and Elemental Profiles, 3rd Food Safety Analysis 2018 Conference, Singapore, 27 – 28 November 2018.
2. Ng SM I., Chew CF P., Toh YN J., Koh SP, Phang CS and Chiew KT P. Determination of Inorganic Arsenic in Food by Solid Phase Extraction – Inductively Coupled Plasma Mass Spectrometry (SPE-ICP-MS), 3rd Food Safety Analysis 2018 Conference, Singapore, 27 – 28 November 2018.
3. "Development of a Rapid LCMSMS Method for Reliable Pesticide Residue Analysis of Fresh Produce", at the

12th European Pesticide Residues Workshop (EPRW 2018) held on 22-25 May 2018, Munich, Germany;
4. “Comparative Study of Food Additives TiO2 and SiO2”, at the 9th International Conference on Nanotoxicology 2018, held Neuss, Germany, 18-21 Sep 2018
5. “Simultaneous Detection of Lipophilic Marine Biotoxins by LC-MS/MS, at the 2018 Food Safety Analysis Conference”, 27-28 Nov 2018, Singapore.
6. “Determination of Inorganic Arsenic in Food by Solid Phase Extraction – Inductively Coupled Plasma Mass Spectrometry (SPE-ICP-MS)”, at the 2018 Food Safety Analysis Conference, 27-28 Nov 2018, Singapore.
7. “Differentiation of the Geographical Origin of Dairy Milk Sold in Singapore Using Stable Isotope Signatures and Elemental Profiles”, at the 2018 Food Safety Analysis Conference, 27-28 Nov 2018, Singapore.
8. Food Safety and Residue Monitoring in Singapore, Africa Food Safety Workshop, 4-8 June 2018, Pretoria, South Africa.
9. Techniques for Detection of Veterinary Drug Residues in Food, Asia Pacific Metrology Programme, Food Safety Focus Group Workshop, 22 & 23 Nov 2018, Singapore.
10. Veterinary Drug Residue Monitoring in Singapore, Asia Pacific Metrology Programme, Food Safety Focus Group Workshop, 22 & 23 Nov 2018, Singapore.
11. Fukumori R., Oikawa S., Taguchi T. Development of a new on-farm test system for determining blood non-esterified fatty acid and β-hydroxybutyrate levels. The 30th World Buiatrics Congress, 2018 August 31. Sapporo Convention Center, Hokkaido, Japan.
12. Chomchat, P., Noda, J., Junchompoo, C., Sirinarumitr, T., and Sirinarumitr, K. Relationship between serum elements measured by PIXE analytical technique in Captive green turtle (Chelonia mydas) in Thailand, 1st MUT International Conference on Veterinary and Animal Sciences 2017, Bangkok, Thailand, 2018, Feb. 2.
13. Makita K. Participatory project design for improvement of milk production in Mbarara, Uganda. 2nd PENAPH Conference: Participatory Approaches to One Health, 2018 January 10, Khon Kaen, Thailand.
14. Makita K, Asakura S, Makingi G, Kazwala R. Perception and behaviours associated with community-based bovine brucellosis control among agro-pastoralists in Tanzania. The 30th World Buiatrics Congress 2018. 2018 August 30. Sapporo, Japan.
15. Miyama T, Murata R, Okamura I, Byaruhanga J, Mwebembezi W, Muramatsu Y, Makita K. Prevalence of sub-clinical mastitis and its association with milking practice in Mbarara, Uganda. The 30th World Buiatrics Congress 2018. 2018 August 30. Sapporo, Japan.
16. Miyama T, Watanabe E, Ogata Y, Urushiyama Y, Kawahara N, Makita K. Herd-level risk factors associated with Leptospira Hardjo infection in dairy herds in the southern Tohoku, Japan. The 30th World Buiatrics Congress 2018. 2018 August 31. Sapporo, Japan.
17. Miyama T, Nakao T, Nakatsuji H, Okamura I, Byaruhanga J, Mwebembezi W, Makita K. Relationship between feeding management for milking cows and dairy farming productivity, especially of nutritious status of cattle and daily milk yield in Mbarara, Uganda. Poster. 2018 August 31. Sapporo, Japan.
18. Nakada S, Kohara J, Makita K. A cohort study on the economic loss associated with bovine leukemia virus infection in dairy production in Hokkaido, Japan. The 30th World Buiatrics Congress 2018. 2018 September 1. Sapporo, Japan.
19. Fujimoto Y, Ito H, Higuchi H, Ohno H, Makita K. Risk factors for Mycoplasma mastitis outbreak in Hokkaido, Japan. The 30th World Buiatrics Congress 2018. 2018 September 1. Sapporo, Japan.
20. Fujimoto Y, Kohara J, Makita K. Computer simulation of spread of Bovine Leukemia Virus in a dairy farm. The 30th World Buiatrics Congress 2018. 2018 September 1. Sapporo, Japan.
21. Kono H, Makita K, et al. Impact of sociocultural factors and farmers’ behavior on the prevalence of brucellosis in Sri Lanka. Poster. The International Symposium on Veterinary Epidemiology and Economics (ISVEE) 15, 2018 November 12, Chang Mai, Thailand.
22. Makita K, Asakura S, Makingi G, Kazwala R. Participatory planning for community-based control of bovine brucellosis in Tanzania. Poster. The International Symposium on Veterinary Epidemiology and Economics (ISVEE) 15, 2018 November 12, Chang Mai, Thailand.
23. Miyama T, Murata R, Okamura I, Byaruhanga J, Mwebembezi W, Muramatsu Y, Makita K. Causal effect of milking practice to sub-clinical mastitis in Mbarara dairy farms, Uganda. Poster. The International Symposium on Veterinary Epidemiology and Economics (ISVEE) 15, 2018 November 13, Chang Mai, Thailand.
24. Yamagami T, Miyama T, Toyomaki H, Sekiguchi S, Sasaki Y, Sueyoshi M, Makita K. Analysis of the effect of feedback feeding on farm-level porcine epidemic diarrhea occurrence in Kagoshima and Miyazaki Prefectures in Japan. Poster. The International Symposium on Veterinary Epidemiology and Economics (ISVEE) 15, 2018 November 13, Chang Mai, Thailand.
25. Nakada S, Kohara J, Makita K. A cohort study on the milk production loss associated with bovine leukemia virus infection in dairy production in Hokkaido, Japan. Poster. The International Symposium on Veterinary Epidemiology and Economics (ISVEE) 15, 2018 November 13, Chang Mai, Thailand.
26. Fujimoto Y, Nakada S, Kohara J, Makita K. Individual-based infectious disease modelling for Bovine leukemia virus infection in a dairy farm in Hokkaido, Japan. Poster. The International Symposium on Veterinary Epidemiology and Economics (ISVEE) 15, 2018 November 13, Chang Mai, Thailand.
27. Asakura S, Makingi G, John K, Kazwala R, Makita K. Seroprevalence and risk factors for human brucellosis in

agro-pastoral areas in Morogoro Region, Tanzania. The International Symposium on Veterinary Epidemiology and Economics (ISVEE) 15, 2018 November 16, Chang Mai, Thailand.
28. Kadowaki H, Phuc PD, Sato K, Phuong PTM, Hagiwara K, Makita K. Analysis of socio-economic factors associated with voluntary rabies control measures in Vietnam. The International Symposium on Veterinary Epidemiology and Economics (ISVEE) 15, 2018 November 16, Chang Mai, Thailand.
29. Noda, J. Tomizawa, S., Morimoto, K., and Mitarai, S., One health approach for infectious diseases: Elucidation of airborne transmission mechanism. 20th Federation of Asian Veterinary Associations (FAVA) Congress & 18th Indonesian Veterinary Medical Association Congress, Nusa Dua, Bali, Indonesia, 2018, Oct.30-Nov.04, invited speaker.
30. Uchida, L., Byaruhanga. J., Okamura. I., Miyama. T., Vudriko. P., Muramatsu. Y., Makita. K., 2018. Theileria parva survey by simple FTA card-based polymerase chain reaction in dairy cattle in Mbarara, Uganda. The 30th World Buiatrics Congress 2018, Sapporo, Hokkaido, Japan.
31. Toda, U., Ngwe. Tun. M.M., Hayasaka. D., Muramatsu. Y., Asakawa. M., Morita. K. Uchida. L., 2018. Epidemiological survey of tick-borne encephalitis virus in wild raccoon in Hokkaido, Japan. The 26th Seminar on Acari-Diseases Interface, Hakodate, Hokkaido.
32. Usui, M. Spread of antibiotic resistance in food-producing animals and humans. Workshop on Applications for Microbiological Typing and Antimicrobial Resistance. 2018. Feb. 5, Singapore.
33. Kudo, H., Usui, M., Nagafuji, W., Oka, K., Takahashi, M., Yamaguchi, H., Tamura, Y. Inhibition Effect of Flavophospholipol on Conjugative Transfer of the Extended-Spectrum β-lactamase and vanA Genes. Eccmid 2018 April 21. Madrid.
34. Usui, M. The role of flies in circulation of antibiotic-resistant bacteria and antibiotic resistance genes among humans, animals, and environments. The 30th World Buiatrics Congress 2018. 2018 August 30, Sapporo, Japan.

c) National conferences: 18
1. Yanai R., Fukumori R., Aoyama M., Nagao Y. The effect of the introduction of night-time grazing on the mitigation of heat stress in dairy cattle. Japanese Society of Animal Science, the 124th meeting, 2018 March 28. University of Tokyo, Tokyo, Japan.
2. Ishijima S, Ozawa M, Makita K. Multivariable analysis of the association between antimicrobial use and antimicrobial resistance in Salmonella isolated from diseased pigs in Japan. Conference of Society of Japan Veterinary Epidemiology, 2018 March 17, University of Tokyo, Tokyo, Japan.
3. Sugahara N, Japan Pig Veterinary Society, Miyama T, Tamura Y, Makita K. The situation of colistin use in Japanese swine farms. Conference of Society of Japan Veterinary Epidemiology, 2018 March 17, University of Tokyo, Tokyo, Japan.
4. Makita K, Asakura S, Makingi G, Kazwala R. Community-based bovine brucellosis control planning using participatory method in Tanzania. Conference of Society of Japan Veterinary Epidemiology, 2018 March 17, University of Tokyo, Tokyo, Japan.
5. Nakada S, Kohara J, Makita K. The impact of bovine leukemia virus infection on meat weight of dairy cattle at slaughtering. Conference of Society of Japan Veterinary Epidemiology, 2018 March 17, University of Tokyo, Tokyo, Japan.
6. Fujimoto Y, Nakada S, Kohara J, Makita K. Simulations of spread of bovine leukemia virus in a dairy farm. Conference of Society of Japan Veterinary Epidemiology, 2018 March 17, University of Tokyo, Tokyo, Japan.
7. Ishijima S, Ozawa M, Kawanishi M, Makita K. Association between use of antimicrobials and antimicrobial resistance in Salmonella isolated from diseased pigs in Japan. The 161 Society of Japan Veterinary Medical Science, 2018 September 12, Tsukuba, Japan.
8. Fujimoto Y, Nakada S, Kohara J, Makita K. A simulation of bovine leukemia virus infection considering the number of blood-sucking insects. The 161 Society of Japan Veterinary Medical Science, 2018 September 12, Tsukuba, Japan.
9. Noda, J. Tomizawa, S., Nhat, T., and Muramatsu, Y. Sampling Method for Airborne Non-Tuberculosis Mycobacterium with Environmental Aerosols, 11th bioaerosol symposium, Nagano, Nagano, 2018, Feb. 28-29.
10. Shibuya, M., Morales-Vargas. R., Muramatsu. Y., Hagiwara. K., Uchida. L., 2018. Susceptibility of Aedes galloisi from Hokkaido to the infection by Zika virus PRVABC59 strain and point mutation in envelope region. The 66th Annual Meeting of the Japanese Society for Virology, Kyoto, Kyoto.
11. Uchida, L., Toda. U., Ngwe. Tun. M.M., Hayasaka. D., Muramatsu. Y., Asakawa. M., Morita. K., 2018. Epidemiological survey of tick-borne encephalitis virus in wild raccoon and tick species in Hokkaido, Japan. The 59th Annual Scientific Meeting for The Japanese Society of Tropical Medicine, Nagasaki, Nagasaki.
12. Uchida, L., Shibuya. M., Morales-Vargas. R., Muramatsu. Y., Hagiwara. K., 2018. Susceptibility of Aedes japonicus and Aedes galloisi from Hokkaido to infection by Zika virus and point mutation in the viral envelope region. The 59th Annual Scientific Meeting for The Japanese Society of Tropical Medicine, Nagasaki, Nagasaki.
13. Hui, C-W., Murata. R., Ohtsuka. H., Uchida. L., Muramatsu. Y., 2018. Comprehensive identification of bacteria in bovine raw milk using the MALDI Biotyper system. The 8th Annual Meeting of the Society of Farm Animal in Infectious Diseases, Fukuoka, Fukuoka.
14. Takayanagi, S., Sugiyama, M., Usui, M., Asai, T., 2018. Sep. 11. Experiments for appropriate concentration of

colistin in isolating agar for isolating colistin-resistant bacteria. Japan Society for Veterinary Medical Science.
15. Kimura, Y., Harada, K., Shimizu, T., Sato, T., Kajino, A., Usui, M., Tamura, Y., Tsuyuki, Y., Miyamoto, T., Ooki, A., Watarai, M., 2018. Sep. 11. Molecular characterizaiton of Acinetobacter spp., derived from companion animals. Japan Society for Veterinary Medical Science.
16. Ozeki, K., Komatsu, T., Usui, M., Tamura, Y., 2018. Sep. 11. Prevalence and characterization of ESBL-producing bacteria derived from retail vegetables. Japan Society for Veterinary Medical Science.
17. Fukuda, A., Usui, M., Okubo, T., Tagaki, C., Chanchai, B., Tamura, Y. Co-harboring Cephalosporin (bla)/colistin (mcr) Resistance Genes among Enterobacteriaceae from Flies in Thailand. Japan Society for Veterinary Medical Science, 2018. Sep. 11, Tsukuba, Japan.
18. Usui, M. The transmission routes of antimicrobial-resistant bacteria from animals to humans. Japan Society for Veterinary Medical Science, 2018. Sep. 11, Tsukuba, Japan.

d) Other
(Provide website address or link to appropriate information): 7
1. Makita K, Anzai M, Byaruhanga J, Mwebembezi W. Workshop ‘Challenges in the dairy interventions of JICA Safe Milk project’, 2018 August 20, Mbarara, Uganda.
2. Makita K. Control of brucellosis in Uganda and Tanzania. Invited lecture, Advanced and comprehensive studies in zoonosis control, 2018 August 29, Graduate School of Veterinary Medicine, Hokkaido University, Japan.
3. Makita K. Invited workshop ‘Crisis management for infectious diseases’. International Veterinary Student Association (IVSA), 2018 September 1, Azabu University, Japan.
4. Makita K. Invited lecture: Mental health care activities during animal infectious disease outbreaks such as foot-and-mouth disease. 2018 September 14. Transboundary animal infectious disease management meeting, Ministry of Agriculture, Forestry, and Fisheries of Japan.
5. Makita K. Rabies in Japan. Japan Society of Promoting Science/ South Africa National Research Foundation joint research meeting, 2018 September 4, Onderstepoort Veterinary Research Institute, Pretoria, South Africa.
6. Makita K. Rabies in Japan and Vietnam. In seminar ‘Cross-roads of spatial analytic technologies and rabies research’. 2018 December 11, Rakuno Gakuen University, Japan.
7. Makita K, Usui M, Tamura Y. Risk assessment for plasmid-mediated colistin resistance in Escherichia coli in pigs at slaughterhouses using individual based model. At 3rd One Health Lecture series, 2018 December 20, Thammasat University, Thailand.