

# OIE Collaborating Centres Reports Activities

## *Activities in 2018*

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<b>Name of Director of Institute (Responsible Official):</b>	Dr Pierre Kerkhofs
<b>Name (including Title and Position) of Head of the Collaborating Centre (formally OIE Contact Point):</b>	Dr Kris De Clercq, Head of Unit
<b>Name of writer:</b>	Kris De Clercq

**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
OIE Twinning between the OIE CC Sciensano Belgium and NVRI, Vom, Nigeria.	This twinning project aims to build the capacity of the FMD Unit at the NVRI for the improvement of the diagnosis of and control of foot-and-mouth disease virus (FMDV) in Nigeria and in order to prepare the Candidate laboratory to evolve later on towards the level of OIE Reference Laboratory.
Collaboration between the OIE CC Sciensano Belgium and the National Veterinary Institute, Burundi.	This collaboration project aims to build the capacity of the FMD Unit at the NVI-Burundi for the improvement of the diagnosis of and control of foot-and-mouth disease virus (FMDV) in Burundi in order to prepare this laboratory for a possible OIE Twinning programme.

Validation, Quality Assessment and Quality Control of FMDV, BTV and capripox viruses Diagnostic Assays.	Training and capacity building of scientists of several European countries for the laboratory and clinical diagnosis of FMD, BT and capripox viruses and their differential diagnosis.
Development, validation, Quality Assessment and Quality Control of real-time RT-PCR and sequencing of FMDV and Seneca Valley Virus.	Training and capacity building of scientists and technicians of The OIE Ref Centre for FMD BVI, Botswana and the Nat Ref Lab for FMD from Burundi for using real-time RTPCR and sequencing as a tool for the diagnosis and analysis of FMDV and Seneca Valley Virus.
<b>Diagnosis, biotechnology and laboratory</b>	
<b>Title of activity</b>	<b>Scope</b>
Validation of serotype specific real time RT-PCRs for FMDV and BTV.	Development, evaluation and validation of serotype specific real time RT-PCRs for the detection and differentiation of the 7 FMDV serotypes and the 27 BTV serotypes. Validation of the analytical and diagnostic specificity and sensitivity using several strains per serotype.
Validation of an ELISA and an immunoperoxidase monolayer assay for the detection of antibodies against capripox viruses (Lumpy skin disease, sheeppox, goatpox).	An ELISA and an immunoperoxidase monolayer assay (IPMA) to detect antibodies against capripox viruses (lumpy skin disease, sheep and goatpox viruses) in ruminant sera was developed and quality controlled (sensitivity, specificity, repeatability, robustness, correlation with VNT). The tests were evaluated by using sequential sera from experimentally infected or vaccinated cattle or sheep or goats.
Validation of DIVA real time PCRs, for the detection and differentiation of capripox field viruses from vaccine strains.	Evaluation and validation of the different analytical and diagnostic parameters of a DIVA real time PCR, for the detection and differentiation of capripox field viruses from vaccine strains, using samples from lumpy skin disease infection trials and vaccine trials. The fit for purpose of both PCRs was checked.
<b>Vaccines</b>	
<b>Title of activity</b>	<b>Scope</b>

Validation of a refined guinea pig model of foot and mouth disease virus infection for assessing the efficacy of FMD vaccines.	For the evaluation of the repeatability of an in vivo FMD vaccine quality test using a refined and validated FMDV infection model in guinea pigs (GP), 10 vaccine trials using the same potent double-oil emulsion inactivated O1 Manisa vaccine was performed. The statistical analysis will be done in 2018 including the determination of the correlation with the cattle PD50 test.
Quality control of live attenuated or inactivated lumpy skin disease or sheepox vaccines.	The scope of this activity is to control the quality of commercially available or newly developed live attenuated or inactivated lumpy skin disease or sheepox vaccines against an LSDV infection in cattle. The aim of the study is to evaluate whether the LSD attenuated vaccines are able to provide protection in an efficient and safe (side effects) way and to check whether inactivated vaccines could be an interesting alternative.

**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
Quality control of virus strains used in diagnostic assays and for vaccine evaluation and validation.	Virus strains used in the laboratory for serological (virus neutralisation, ELISAs) or virological (virus isolation, antigen ELISA) assays as antigen or as control are checked on a yearly basis by sequencing to evaluate possible deviation after cultivation or passages from the original strains or from the reference strains. Reference strains are obtained from the OIE Ref Centre at Pirbright, UK.	<input checked="" type="checkbox"/> Surveillance and control of animal diseases <input type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare
Validation and quality control of an ELISA for the detection of antibodies against LSD and sheeppox virus	An ELISA to detect antibodies against lumpy skin disease virus after infection or vaccination (post vaccination monitoring).	<input checked="" type="checkbox"/> Surveillance and control of animal diseases <input type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare
Evaluation and validation of an Immunoperoxidase monolayer assay (IPMA) for the detection of antibodies against capripox viruses.	An immunoperoxidase monolayer assay (IPMA) to detect antibodies against capripox viruses (lumpy skin disease, sheeppox and goatpox viruses) after infection or vaccination (post vaccination monitoring).	<input checked="" type="checkbox"/> Surveillance and control of animal diseases <input type="checkbox"/> Food safety <input type="checkbox"/> Animal welfare

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

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

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

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
The OIE FMD Reference Laboratory The Pirbright Laboratory UK	UK	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East	- OIE/FAO FMD Reference Laboratory Network - Vaccine matching - International proficiency tests - Post vaccination monitoring - Virus and sequence exchange - Obtaining viral reference strains

<p>The OIE FMD Reference Laboratory Anses, Maisons Alfort, Paris, France</p>	<p>France</p>	<p><input type="checkbox"/>Africa <input type="checkbox"/>Americas <input type="checkbox"/>Asia and Pacific <input checked="" type="checkbox"/>Europe <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference Laboratory Network  - Vaccine matching  - International proficiency tests  - Post vaccination monitoring  - Virus and sequence exchange  - Obtaining viral reference strains</p>
<p>The OIE CC Institute of Diagnostic Virology Friedrich Loeffler Institut (FLI)  Germany</p>	<p>Germany</p>	<p><input type="checkbox"/>Africa <input type="checkbox"/>Americas <input type="checkbox"/>Asia and Pacific <input checked="" type="checkbox"/>Europe <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference Laboratory Network  - Vaccine matching  - International proficiency tests  - Post vaccination monitoring  - Virus and sequence exchange  - Obtaining cell cultures</p>

<p>The OIE FMD Reference Laboratory</p> <p>OVI Onderstepoort South-Africa</p>	<p>South-Africa</p>	<p><input checked="" type="checkbox"/>Africa  <input type="checkbox"/>Americas  <input type="checkbox"/>Asia and Pacific  <input type="checkbox"/>Europe  <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference  Laboratory Network</p> <p>- Vaccine matching</p> <p>- International proficiency  tests</p> <p>- Post vaccination  monitoring</p> <p>- Virus and sequence  exchange</p>
<p>The OIE FMD Reference Laboratory</p> <p>Istituto Zooprofilattico Sperimentale  della Lombardia e dell'Emilia  Romagna Brescia Italy</p>	<p>Italy</p>	<p><input type="checkbox"/>Africa  <input type="checkbox"/>Americas  <input type="checkbox"/>Asia and Pacific  <input checked="" type="checkbox"/>Europe  <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference  Laboratory Network</p> <p>- Vaccine matching</p> <p>- International proficiency  tests</p> <p>- Post vaccination  monitoring</p> <p>- Virus and sequence  exchange</p> <p>- Obtaining viral reference  strains</p>

<p>The OIE FMD Reference Laboratory SENASA Buenos Aires Argentina</p>	<p>Argentina</p>	<p><input type="checkbox"/>Africa <input checked="" type="checkbox"/>Americas <input type="checkbox"/>Asia and Pacific <input type="checkbox"/>Europe <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference Laboratory Network - Vaccine matching - International proficiency tests - Post vaccination monitoring</p>
<p>The OIE FMD Reference Laboratory BVI Gaborone Botswana</p>	<p>Botswana</p>	<p><input checked="" type="checkbox"/>Africa <input type="checkbox"/>Americas <input type="checkbox"/>Asia and Pacific <input type="checkbox"/>Europe <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference Laboratory Network - Vaccine matching - International proficiency tests - Post vaccination monitoring - Virus and sequence exchange - Obtaining viral reference strains</p>

<p>The OIE FMD Reference Laboratory PANAFTOSA Brasil</p>	<p>Brasil</p>	<p><input type="checkbox"/>Africa  <input checked="" type="checkbox"/>Americas  <input type="checkbox"/>Asia and Pacific  <input type="checkbox"/>Europe  <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference Laboratory Network - Vaccine matching - International proficiency tests - Post vaccination monitoring - sequence exchange</p>
<p>The OIE FMD Reference Laboratory LVRI Lanzou China</p>	<p>China</p>	<p><input type="checkbox"/>Africa  <input type="checkbox"/>Americas  <input checked="" type="checkbox"/>Asia and Pacific  <input type="checkbox"/>Europe  <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference Laboratory Network - Vaccine matching - International proficiency tests - Post vaccination monitoring - sequence exchange</p>

<p>The OIE FMD Reference Laboratory  PIADC Plum Island US</p>	<p>USA</p>	<p><input type="checkbox"/>Africa  <input checked="" type="checkbox"/>Americas  <input type="checkbox"/>Asia and Pacific  <input type="checkbox"/>Europe  <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference  Laboratory Network  - Vaccine matching  - International proficiency  tests  - Post vaccination  monitoring  - Virus and sequence  exchange  - Obtaining viral reference  strains</p>
<p>The OIE FMD Reference Laboratory  ARRIAH  of the Russian Federation</p>	<p>Russia</p>	<p><input type="checkbox"/>Africa  <input type="checkbox"/>Americas  <input type="checkbox"/>Asia and Pacific  <input checked="" type="checkbox"/>Europe  <input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference  Laboratory Network  - Vaccine matching  - International proficiency  tests  - Post vaccination  monitoring  - sequence  exchange</p>

<p>The OIE FMD Reference Laboratory</p> <p>National Institute of Animal Health</p> <p>Department of Livestock Development</p> <p>Pakchong THAILAND</p>	<p>Thailand</p>	<p><input type="checkbox"/>Africa</p> <p><input type="checkbox"/>Americas</p> <p><input checked="" type="checkbox"/>Asia and Pacific</p> <p><input type="checkbox"/>Europe</p> <p><input type="checkbox"/>Middle East</p>	<p>- OIE/FAO FMD Reference Laboratory Network</p> <p>- Vaccine matching</p> <p>- International proficiency tests</p> <p>- Post vaccination monitoring</p> <p>- sequence exchange</p>
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**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
<p>The OIE Bluetongue Reference</p> <p>Laboratory Pirbright Laboratory UK</p>	<p>UK</p>	<p><input type="checkbox"/>Africa</p> <p><input type="checkbox"/>Americas</p> <p><input type="checkbox"/>Asia and Pacific</p> <p><input checked="" type="checkbox"/>Europe</p> <p><input type="checkbox"/>Middle East</p>	<p>- Diagnostic assay and vaccine quality control for bluetongue viruses</p> <p>- International proficiency testing</p>
<p>The OIE Poxvirus Reference</p> <p>Laboratory Pirbright Laboratory UK</p>	<p>UK</p>	<p><input type="checkbox"/>Africa</p> <p><input type="checkbox"/>Americas</p> <p><input type="checkbox"/>Asia and Pacific</p> <p><input checked="" type="checkbox"/>Europe</p> <p><input type="checkbox"/>Middle East</p>	<p>- Diagnostic assay and vaccine quality control for capripox viruses</p> <p>- International proficiency testing</p>
<p>The OIE Lumpy skin disease Reference Laboratory OVI</p> <p>Onderstepoort South-Africa</p>	<p>South-Africa</p>	<p><input checked="" type="checkbox"/>Africa</p> <p><input type="checkbox"/>Americas</p> <p><input type="checkbox"/>Asia and Pacific</p> <p><input type="checkbox"/>Europe</p> <p><input type="checkbox"/>Middle East</p>	<p>- Diagnostic assay and vaccine quality control for lumpy skin disease viruses</p> <p>- International proficiency testing</p>

<p>The OIE Rift Valley fever</p> <p>Reference Laboratory, Institut Pasteur, Paris France</p>	France	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	<p>- Diagnostic assay and vaccine quality control for Rift valley fever viruses</p> <p>- International proficiency testing</p>
<p>The Kimron Veterinary Institute, Bet Dagan, Israel</p>	Israel	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East	<p>- Diagnostic assay and vaccine quality control for bluetongue viruses, FMDV, capripox viruses</p> <p>- International proficiency testing</p>

**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?

Yes

Name of expert	Kind of consultancy	Subject
Kris De Clercq	Representative SCAD	USAID PREDICT All-Country Meeting, 09/01/2018, Brussels
Kris De Clercq	Representative SCAD	Meeting GalvMed en Bill and Melinda Gates Foundation, 26/01/2018, Edinburgh, Schotland
Kris De Clercq	Vice President SCAD	OIE SCAD meeting, Paris, 12-16/02/2018
Kris De Clercq	Representative OIE Collaborative Centre	OIE Twinning Project: Meeting 6: Implementation workshop, 11-17/03/2018, NVRI Vom, Nigeria
Kris De Clercq	Representative SCAD	Annual Workshop Reference Laboratories for FMD, 08-09/05/2018, Pirbright, UK
Kris De Clercq	Vice President SCAD	OIE General Session, Paris, 20-25/5/2018
Kris De Clercq	Expert LSD	STM BTSF mission LSD Belarus, 09-13/07/2018, Belarus
Kris De Clercq	Representative SCAD	OIE AHG FMD Surveillance, 27-31/08/2018, OIE, Paris
Kris De Clercq	Vice President SCAD	OIE SCAD meeting, Paris, 10-14/09/2018
Kris De Clercq	Expert Capripox	Workshop Sheeppox, Greece and Bulgaria, 18-21/09/2018, Greece

Kris De Clercq	Representative SCAD	Annual Workshop Reference Laboratories for PPR and Capripox, 11-12/10/2018, Montpellier, France
Kris De Clercq	Representative SCAD	Standing Group of Experts on Lumpy Skin Disease in South-East Europe under the GF-TADsGF TADs SGE LSD, FYRO, 17-19/10/2018
Kris De Clercq	Representative SCAD	OIE AHG FMD Status, 22-25/10/2018, OIE, Paris
Kris De Clercq	Representative SCAD	EuFMD Closed and Open Session, 29/10-01/11/2018, Italy
Kris De Clercq	Representative SCAD	OIE/FAO Annual meeting FMD Ref Lab Network, Pirbright, UK, 6-8/11/2018
Kris De Clercq	Representative OIE Collaborative Centre	OIE Twinning Project: Meeting 8: Regional workshop with participants from Nigeria, Chad, Cameroon, Niger, Benin, Ghana, 9-15/12/2018, NVRI Vom, Nigeria

**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: 2
- b) Seminars: 2
- c) Hands-on training courses: 2
- d) Internships (>1 month): 1

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
a	Quality control of FMD diagnosis and sequencing, vaccine quality control and principals of accreditation	Nigeria	4
a	Quality control of FMD diagnosis and LSD diagnosis as differential diagnosis, vaccine quality control and principals of accreditation	Kazakhstan	4
b	Seminar on "Quality control of Transboundary Animal Diseases Diagnosis: Sequencing and Bioinformatic Analysis of Animal Pathogen Genomes"	Middle-East and North-Africa	35
b	Seminar on "Quality control of Sheeppox diagnosis and vaccines"	Greece and Bulgaria	55

c	Quality control of FMD diagnosis: real-time RT-PCR, sequencing, phylogenetic analysis, vaccine quality control and principals of accreditation	Nigeria	12
c	Quality control of FMD diagnosis: real-time RT-PCR, sequencing, phylogenetic analysis, vaccine quality control and principals of accreditation	Nigeria	8
d	FMD diagnosis: real-time RT-PCR, sequencing, phylogenetic analysis, quality control of diagnostics and vaccines, and principals of accreditation	Ethiopia	1

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

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

Yes

National/International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	OIE/FAO FMD Reference Laboratories Network meeting	OIE/FAO FMD Reference OIE Ref Centre The Pirbright Institute, UK	11/2018	UK	35

**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: 12

Souley Kouato B, Elliot FM, King D, Hyera J, Knowles N, Ludi AB, Mioulet V, Matlho G, De Clercq K, Thys E, Marichatou H, Issa S, Saegerman C (2018). Outbreak investigations and molecular characterization of foot-and-mouth disease virus in Niger. *Transbound Emerg Dis.* 65(1), 146-157. doi: 10.1111/tbed.12642

Saegerman C and De Clercq K (2018). La dermatose nodulaire contagieuse : actualités (partie 1). *Le Point Vétérinaire*, 382, 56-63.

Chitray M, Fosgate GT, Grazioli S, Willems T, Tshabalala T, De Vleeschauwer A, Esterhuysen JJ, E. Brocchi E, De Clercq K, Maree FF. (2018). Development and validation of a foot-and-mouth disease virus SAT serotype-specific 3ABC assay to differentiate infected from vaccinated animals. *Journal of Virological Methods* 255, 44-51.

Vandenbussche F, Mathijs E, Ularamu HG, Ehizibolo DO, Haegeman A, Lefebvre D, De Vleeschauwer AR, Van Borm S, De Clercq K. (2018). Complete Genome Sequences of Five Foot-and-Mouth Disease Viruses of Serotype A Isolated from Cattle in Nigeria between 2013 and 2015. *Genome Announc.* 6(7). pii: e00039-18. doi: 10.1128/genomeA.00039-18.

De Vleeschauwer AR, Zhou X, Lefebvre DJ, Garnier A, Pignon C, Lacour SA, Bakkali-Kassimi L, Zientara S, De Clercq K, Klonjkowski B (2018). A canine adenovirus type 2 vaccine vector confers protection against foot-and-mouth disease in guinea pigs. *Vaccine*, 36, 16, 2193-2198.

Saegerman C, Bertagnoli S, Meyer G, Ganière JP, Caufour P, De Clercq K, Jacquiet P, Fournié G, Hautefeuille C, Eto F, Casal J (2018). Risk of introduction of Lumpy Skin Disease in France by the import of vectors in animal trucks. *PLoS One*, 13(6): e0198506. doi: 10.1371/journal.pone.0198506. eCollection 2018.

Saegerman C, Bertagnoli S, Meyer G, Ganière JP, Caufour P, De Clercq K, Jacquiet P, Rouby JC, Hautefeuille C, Eto F, Dunoyer C, Casal J. (Accepted). Risk of introduction of Lumpy Skin Disease into France through imports of cattle. *Transbound Emerg Dis*. 2018 Dec 22. doi: 10.1111/tbed.13111.

Martinelle L., Dal Pozzo F., Thys C., De Leeuw I., Van Campe W., De Clercq K., Thiry E., Saegerman C. (2018). Assessment of cross-protection induced by a BTV8 vaccine towards other BTV serotypes in experimental conditions. *Vet Res.*, 49(1):63, doi: 10.1186/s13567-018-0556-4.

Cargnel M, Méroc E, Haegeman A, De Leeuw I, Van der Stede Y, De Clercq K, Welby S (2018). Effectiveness and cost-benefit study to encourage herd owners in a cost sharing vaccination programme against bluetongue serotype-8 in Belgium. *Transbound Emerg Dis*. 2018 Oct 3. doi: 10.1111/tbed.13034

Saegerman C, Bertagnoli S, Meyer G, Ganière JP, Caufour P, De Clercq K, Jacquiet P, Fournié G, Hautefeuille C, Eto F, Casal J (2018). Risque d'introduction de la dermatose nodulaire contagieuse en France par l'introduction de vecteurs dans des camions à bestiaux. *Épidémiol. et santé anim.* 2018, 74, 159-174

Eto F, Bertagnoli S, Casal J., Caufour P, De Clercq K, Ganière JP, Hautefeuille C, Jacquiet P, Rouby JC, Dunoyer C, Meyer G, Saegerman C. (2018). Risque d'introduction de la dermatose nodulaire contagieuse en France par les importations/échanges de bovins vivants. *Épidémiol. et santé anim.*, 2018, 74, 119-130.

Souley Kouato B., De Clercq K., Abatih E.N., Dal Pozzo F., King D.P., Thys E., Marichatou H., Saegerman C. Review of epidemiological risk models for foot-and-mouth disease: implications for prevention strategies with a focus on Africa. *PLoS One*. 2018 Dec 13;13(12):e0208296. doi: 10.1371/journal.pone.0208296. eCollection 2018.

#### b) International conferences: 12

Poster presentation : Cargnel M., Van der Stede Y., Haegeman A., De Leeuw I., De Clercq K., Méroc E., Welby S. Effectiveness and cost-benefit study to encourage herd owners in a cost sharing vaccination programme against bluetongue serotype-8 in Belgium. Annual Meeting VEE 2018 "Social veterinary epidemiology: how to induce behavioural changes in animal health management", 26 October 2018, Palace of the Academies, Brussels, Belgium.

Oral presentation : Lefebvre D., Ularamu H.G., Atuman Y.J., De Vleeschauwer A., Haegeman A., Wungak Y.S., Ehizibolo D.O., Lazarus D.D., Nwosuh C.I., Umoh J.U., Okolocha E.C., Kazeem H.M., Van Borm S., Fish I., Pauszek S., Stenfeldt C Arzt J. De Clercq K. Foot-and-mouth disease in Nigeria. The Open Session of the European Commission for the control of Foot-and-Mouth Disease (EuFMD) 2018, 29-31 October 2018, Borgo Egnazia, Puglia, Italy.

Oral presentation : Jamal S.M., Goris N., De Clercq K., Wildsen G., Li Y., Dekker A. Potency assessment of FMD vaccines using standardized serological assays. The Open Session of the European Commission for the control of Foot-and-Mouth Disease (EuFMD) 2018, 29-31 October 2018, Borgo Egnazia, Puglia, Italy.

Oral presentation : Estevez Garcia A.I., Lefebvre D., Nyabongo L., Haegeman A., Nkundwanayo C., De Vleeschauwer A., Ntakirutimana D., De Leeuw I., Nsanganyumwami D., van den Berg T., Niyokwishimira A., De Clercq K. Foot-and-mouth disease in Burundi. The Open Session of the European Commission for the control of Foot-and-Mouth Disease (EuFMD) 2018, 29-31 October 2018, Borgo Egnazia, Puglia, Italy.

Oral presentation : Haegeman A. Een lumpy skin disease epidemie in Europa: risicoanalyse voor België, diagnose, vector transmissie en vaccinatie. 11e jaarlijks symposium Contractueel Onderzoek - DG Dier, Plant en Voeding, 23 Oktober 2018, Brussel, België.

Oral presentation : Haegeman A., De Leeuw I., De Vleeschauwer A., Demarez C., De Clercq K., Mostin L., Van Campe W. Improved methods for capripox virus diagnosis with focus on molecular DIVA tests to differentiate field virus strains from vaccine strains. EU Capripox viruses and Peste des Petits ruminants Reference Laboratories Workshop 2018, 11-12 October 2018, Montpellier, France.

Oral presentation : De Vleeschauwer A., Demarez C., Haegeman A., De Leeuw I., Knapen K., De Clercq K. Capripox Proficiency Testing 2018. EU Capripox viruses and Peste des Petits ruminants Reference Laboratories Workshop 2018, 11-12 October 2018, Montpellier, France.

Oral presentation : De Vleeschauwer A., Demarez C., Haegeman A., De Leeuw I., Sohier C., Mostin L., Mattys E., Vandebussche F., Van Borm S., De Clercq K. EURL Capripox: Workprogramme 2018. EU Capripox viruses and Peste des Petits ruminants Reference Laboratories Workshop 2018, 11-12 October 2018, Montpellier, France.

Oral presentation : Sohier C., Haegeman A., Mostin L., De Leeuw I., Van Campe W., De Vleeschauwer A., De Regge N., De Clercq K. Experimental evidence of mechanical transmission of lumpy skin disease virus by *Stomoxys calcitrans* biting flies. EU Capripox viruses and Peste des Petits ruminants Reference Laboratories Workshop 2018, 11-12 October 2018, Montpellier, France.

Oral presentation: Lefebvre D. "An introduction to the molecular epidemiology of foot-and-mouth disease". Joint FAO/IAEA Training Course on "Transboundary Animal Diseases Diagnosis: Sequencing and Bioinformatic Analysis of Animal Pathogen Genomes", 18 September 2018, Seibersdorf, Oostenrijk.

Oral presentation: Lefebvre D. "Phylogenetic reconstruction and analysis of FMD outbreak data. Joint FAO/IAEA Training Course on "Transboundary Animal Diseases Diagnosis: Sequencing and Bioinformatic Analysis of Animal Pathogen Genomes", 18 September 2018, Seibersdorf, Oostenrijk.

Poster presentation : Pourquoi P., Laffont M., Despois L., Bresson A., Haegeman A., Hoffmann B., De Clercq K., Grewis L. Validation of 2 new qPCRs for the detection of Capripoxviruses and differentiating LSDV infected from vaccinated animals. The 11th International Congress for Veterinary Virology - 12th Annual Meeting of EPIZONE, 27-30 August 2018, Vienna, Austria.

c) National conferences: 1

Oral presentation: Andy Haegeman, Kris De Clercq. A lumpy skin disease epidemic in Europe: risk analysis for Belgium, diagnosis, vector transmission and vaccination. Animal Health Symposium. Brussels, Belgium, 23/10/2018

d) Other

(Provide website address or link to appropriate information): 2

European Food Safety Authority (EFSA), Calistri P., De Clercq K., De Vleeschauwer A., Gubbins S., Klement E., Stegeman A., Corti Abrahantes J., Antoniou S.-E., Broglia A., Gogin A. Lumpy skin disease: scientific and technical assistance on control and surveillance activities. EFSA Journal 2018;16(10):5452  
<https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2018.5452>

Newsletter: Lefebvre D. 2018. GFRA Newsletter- Issue 6. Available at <https://www.ars.usda.gov/GFRA/newsletters.htm>.