

OIE Reference Laboratory Reports Activities

Activities in 2020

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Lumpy skin disease
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Name (including Title) of Head of Laboratory (Responsible Official):	Dr Misheck Mulumba
Name (including Title and Position) of OIE Reference Expert:	Dr David Wallace, Senior Researcher
Which of the following defines your laboratory? Check all that apply:	Governmental Research Academic

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
VNT (SNT variation)	Yes	231	0
Direct diagnostic tests			
PCR	Yes	19	0

ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards. To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by the OIE?

No

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

No

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
BANGLADESH	Request for assistance with LSD vaccine/s	Remote - provided details for local commercial LSD vaccine manufacturer
VIETNAM	Request for help with LSD protocols	Remote - sent papers with protocols via email.
CHINESE TAIPEI	Expert advice sought on LSD via online workshop for Asia-Pacific.	Answered specific questions to attendees, remotely, online.

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
Horizon2020-DEFEND: Addressing the dual emerging threats of African swine fever and lumpy skin disease in Europe.	5 years	To investigate all important aspects of LSD (and, ASF) to help mitigate the risks to Europe (primarily, but in effect, globally)	The Pirbright Institute (UK), Sciensano (Belgium) and 24 others.	AZERBAIJAN

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:
A sero-prevalence survey on LSD was conducted in Gauteng Province in South Africa, with sera collected for bio-banking in new diagnostic test evaluation, of relevance internationally. In addition, field isolates of LSDV were sequenced and compared to vaccine and virulent field isolate genomes in GenBank, with relevance to vaccine stability in the field. (publication available online)

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:
As above - field sera were collected and analysed for antibodies to LSDV using VNT. And, sequence data and comparisons was generated from field isolates of LSDV collected between 1991 and 2019.

13. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category)

a) Articles published in peer-reviewed journals: 3

van Schalkwyk A, Kara P, Ebersohn K, Mather A, Annandale CH, Venter EH, Wallace DB. Potential link of single nucleotide polymorphisms to virulence of vaccine-associated field strains of lumpy skin disease virus in South Africa. *Transbound Emerg Dis.* 2020 Jun 7. doi: 10.1111/tbed.13670. PMID: 32506755.

Aleksandr, K., Olga, B., Wallace, D.B., Pavel, P., Yana, P., Svetlana, K., Alexander, N., Vladimir, R., Dmitriy, L., & Alexander, S. (2020). Non-vector-borne transmission of lumpy skin disease virus. *Scientific reports*, 10(1), 7436. <https://doi.org/10.1038/s41598-020-64029-w>.

Alexander Sprygin, Antoinette Van Schalkwyk, Irina Shumilova, Alexander Nesterov, Svetlana Kononova, Pavel

Prutnikov, Olga Byadovskaya, Aleksandr Kononov. Arch Virol. 2020 Nov;165(11):2675-2677. doi:

10.1007/s00705-020-04756-7. Epub 2020 Aug 9.

Full-length genome characterization of a novel recombinant vaccine-like lumpy skin disease virus strain detected during the climatic winter in Russia, 2019

PMID: 32772251

b) International conferences: 0

c) National conferences: 2

Kara, P.D., Wallace, D.B., Van Schalkwyk, A., Lubisi, A. and Mather, A.S. Evaluation of a Lumpy Skin Disease Diagnostic Test and Disease Surveillance in Gauteng (2020). Oral presentation at 7th GDARD Extension Conference, 13-14 February 2020, Muldersdrift, South Africa.

Wallace, D.B., Mather, A.S., Van Schalkwyk, A., Kara, P.D. and Lubisi, A. "Lumpy skin disease, sheeppox and goatpox – an overview". Limpopo Veterinary Services Congress, Loskop Forever Resort Conference Centre, 11-12 March 2020.

d) Other:

(Provide website address or link to appropriate information) 0

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries

To recommend the prescribed and alternative tests or vaccines as OIE Standards

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

a) Technical visits: 0

b) Seminars: 0

c) Hands-on training courses: 1

d) Internships (>1 month): 0

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
c	Turkey	3

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025	Accreditation certificate_App_OVI_28Feb18.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
(no LSD-specific tests currently accredited)	SANAS (Department Agriculture, Land Reform and Rural Development approval pending)

17. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

Yes

(See *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4*)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
Asia-Pacific meeting on LSD.	07/20	Online	Expert participant	No title - fielded specific questions on LSD.

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

20. Did your laboratory exchange information with other OIE Reference Laboratories designated for the same pathogen or disease?

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

No

22. Did your laboratory collaborate with other OIE Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
Enhancing Research For Africa Network (ERFAN)	Currently investigating research collaborations on LSD with other SADC laboratories, via the network.	(IZSAM [Italy])
H2020-DEFEND (ASF and LSD)	An EU-funded project covering all aspects of diagnosis, epidemiology and control.	The Pirbright Institute (UK) and SCIENSANO (Belgium)

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at: <http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
Harmonising existing test method/s (SNT/VNT)	1	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

Yes

Kind of consultancy	Location	Subject (facultative)
Evaluation of an online LSD preparedness training course (via the FAO)	online	The course covered the following modules with a total study time of approximately 10 hours, in self-paced style: 1. General overview of LSD, 2. Clinical diagnosis, 3. Laboratory diagnosis, 4. Epidemiology and outbreak investigation, 5. Monitoring and Surveillance and 6. Control and eradication

25. Additional comments regarding your report:

As relevant to all/most OIE Reference Laboratories globally, 2020 was a particularly difficult/challenging year for collaborations, material transfers, training etc. South Africa was hit hard by the COVID-19 pandemic from March 2020 (with highest lockdown level being instituted for 2 months), and an even worse 2nd wave is now being experienced.

This has resulted in hampering, postponement or even cancellation of a number of relevant activities such as training or diagnostics.