

# WOAH Reference Laboratory Reports Activities 2024

This report has been submitted: 30 janvier 2025 18:16

## LABORATORY INFORMATION

|  |   |
|--|---|
| <b>*Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:</b> | Lumpy skin disease  |
| <b>*Address of laboratory:</b>   | Ash road  |
| <b>*Tel:</b>   | +44-1483 23.24.41   |
| <b>*E-mail address:</b>  | georgina.limon-vega@pirbright.ac.uk   |
| <b>Website:</b>  | <a href="https://www.pirbright.ac.uk/our-science/non-vesicular-reference-laboratory">https://www.pirbright.ac.uk/our-science/non-vesicular-reference-laboratory</a> |
| <b>*Name (including Title) of Head of Laboratory (Responsible Official):</b>                 | Prof Bryan Charleston, Institute Director   |
| <b>*Name (including Title and Position) of WOAH Reference Expert:</b>                        | Dr Georgina Limon-Vega, Group Leader  |
| <b>*Which of the following defines your laboratory? Check all that apply:</b>                | Research agency   |

## TOR1: DIAGNOSTIC METHODS

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 WOAH Manual (Yes/No) | Total number of test performed last year |                 |
|---------------------------|-----------------------------------|--|-----------------|
| Indirect diagnostic tests |                                   | Nationally                               | Internationally |
| ELISA                     | Yes                               | 11                                       | 220             |
| SNT                       | Yes                               | 0  | 80              |
| Direct diagnostic tests   |                                   | Nationally                               | Internationally |
| Capripox Real-time PCR    | Yes                               | 11                                       | 4               |
|                           |                                   |  |                 |

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|                 |     |   |   |
|-----------------|-----|---|---|
| Differentiation | Yes | 0 | 4 |
|-----------------|-----|---|---|

## TOR2: REFERENCE MATERIAL

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

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA?H Members?

Yes

| Type of reagent available | Related diagnostic test | Produced/ provide | Amount supplied nationally (ml, mg) | Amount supplied internationally (ml, mg) | No. of recipient WOA?H Member Countries | Country of recipients           |
|---------------------------|-------------------------|-------------------|-------------------------------------|--|---|---------------------------------|
| Lumpy skin disease virus  | PCR                     | Provide           | 0                                   | 2ml                                      | 2                                       | IRELAND, KOREA (REP. OF),       |
| Lumpy skin disease virus  | PCR                     | Provide           | 0                                   | 100ul                                    | 1                                       | KOREA (REP. OF),                |
| Lumpy skin disease virus  | PCR                     | Provide           | 2ml                                 | 1ml                                      | 1                                       | CZECH REPUBLIC, UNITED KINGDOM, |

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOA?H Members?

Not applicable

## TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

No

7. Did your laboratory validate diagnostic methods according to WOA?H Standards for the designated pathogen or disease?

No

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

No

9. Did your laboratory validate vaccines according to WOA?H Standards for the designated pathogen or disease?

No

## TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOA?H Members?

Yes

| Name of WOA?H Member Country seeking assistance | Date       | Which diagnostic test used | No. samples received for provision of diagnostic support | No. samples received for provision of confirmatory diagnoses |
|---|------------|----------------------------|--|--|
| MONGOLIA  | 2024-04-25 | ELISA                      | 220  | 0  |

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|          |            |               |    |   |
|----------|------------|---------------|----|---|
| MONGOLIA | 2024-04-25 | VNT           | 80 | 0 |
| MONGOLIA | 2024-04-25 | Real time PCR | 4  | 0 |

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOA Member?

Yes

| Name of the WOA Member Country receiving a technical consultancy | Purpose   | How the advice was provided |
|--|---|-----------------------------|
| MONGOLIA   | Discuss sequencing results from animals with LSD-like signs previously vaccinated with heterologous vaccine | Email                       |
| PAKISTAN   | Establishment of an MoU for Pirbright to support Pakistan with developing capacity for LSD                  | Email and video call        |
| JAPAN  | Provision of reference strains (to be delivered in 2025)  | Email                       |

## TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOA Members other than the own?

Yes

| Title of the study   | Duration  | Purpose of the study   | Partners (Institutions)                                | WOAH Member Countries involved other than your country |
|--|-----------|--|--|--|
| Epidemiological and financial evaluation of lumpy skin disease outbreaks in dairy farms in Thailand                              | 10 months | Estimate epidemiological parameters and financial losses due to LSD outbreaks in Thailand      | Chiang Mai University, Thailand                        | THAILAND   |
| Controlling transboundary animal diseases spread in livestock markets: A pilot intervention study                                | 6 months  | Pilot informed interventions at livestock markets for control of transboundary animal diseases | National Veterinary Research Institute (NVRI), Nigeria | NIGERIA  |
| Foot and Mouth Disease- Lumpy Skin Disease (FMD-LSD) Laboratory Capacity Development for Animal Health Laboratories in Indonesia | 12 months | Improve capacity of Indonesian animal health laboratories to detect FMD and LSD                | PUSVETMA, Indonesia                                    | INDONESIA  |

13. In exercising your activities, have you identified any regulatory research needs\* relevant for WOA?

No

## TOR6: EPIZOOLOGICAL DATA

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14. Did your Laboratory collect epidemiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:

Environmental samples as part of a longitudinal study in Northern Nigeria.  
Attack rate, fatality rate and mortality rate in dairy farms experiencing LSD outbreaks in Northern Thailand.

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:

Brown, E., Ehizibolo, D., Dogonyaro, B.B., Wungak, Y., Oyekan, O., Adedeji, A., Ijeoma, S., Atai, R., Oguche, M., Samson, M., Rosso, F., Ludi, A.B., Limon, G., Shaw, A.E., Colenutt, C., Gubbins, S. (2024). Environmental sampling for the detection of capripox viruses and peste des petits ruminants virus in households and livestock markets in Plateau State, Nigeria. Access Microbiology <https://doi:10.1099/acmi.0.000872.v3>

Modethed, W., Kreausukon, K., Singhla, T., Boonsri, K., Pringproa, K., Sthitmatee, N., Vinitchaikul, P., Srisawang, S., Salvador, R., Gubbins, S., Limon, G., Punyapornwithaya, V. (2025) An evaluation of financial losses due to lumpy skin disease outbreaks in dairy farms of Northern Thailand (2025) An evaluation of financial losses due to lumpy skin disease outbreaks in dairy farms of Northern Thailand. Frontiers Veterinary Epidemiology and Economics. <https://doi:10.3389/fvets.2024.1501460>

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

a) Articles published in peer-reviewed journals:

3

Brown, E., Ehizibolo, D., Dogonyaro, B.B., Wungak, Y., Oyekan, O., Adedeji, A., Ijeoma, S., Atai, R., Oguche, M., Samson, M., Rosso, F., Ludi, A.B., Limon, G., Shaw, A.E., Colenutt, C., Gubbins, S. (2024) Environmental sampling for the detection of capripox viruses and peste des petits ruminants virus in households and livestock markets in Plateau State, Nigeria. Access Microbiology <https://doi:10.1099/acmi.0.000872.v3>

Modethed, W., Kreausukon, K., Singhla, T., Boonsri, K., Pringproa, K., Sthitmatee, N., Vinitchaikul, P., Srisawang, S., Salvador, R., Gubbins, S., Limon, G., Punyapornwithaya, V. (2025) An evaluation of financial losses due to lumpy skin disease outbreaks in dairy farms of Northern Thailand. Frontiers Veterinary Epidemiology and Economics <https://doi:10.3389/fvets.2024.1501460>

Ismar R Haga, Barbara B Shih, Gessica Tore, Noemi Polo, Paolo Ribeca, Delgerzul Gombo-Ochir, Gansukh Shura, Tsagaan Tserenchimed, Bazarragchaa Enkhbold, Dulam Purevtseren, Gerelmaa Ulziibat, Batchuluun Damdinjav, Lama Yimer, Fufa D Bari, Daniel Gizaw, Adeyinka Jeremy Adedeji, Rebecca Bitiyong Atai, Jolly Amoché Adole, Banenat Bajehson Dogonyaro, Pradeep Lakpriya Kumarawadu, Carrie Batten, Amanda Corla, Graham L Freimanis, Chandana Tennakoon, Andy Law, Samantha Lycett, Tim Downing, Philippa M. Beard. Sequencing and analysis of lumpy skin disease virus whole genomes reveals a new viral subgroup in west and central Africa. Viruses, 2024, 16 (4), 557 <https://doi.org/10.3390/v16040557>.

b) International conferences:

1

*Presentation given at the International Symposium of Veterinary Epidemiology and Economics (ISVEE - Sydney, November 2024):  
The structure and trade patterns in selected livestock markets in Northern Nigeria and their potential role for transmission of transboundary animal Diseases*

c) National conferences:

0

d) Other (Provide website address or link to appropriate information):

2

*Presentation given as part of the 8th Scientific Day on Transboundary Animal Diseases in Tunis to representatives of the veterinary services from Northern Africa countries. Title of the presentation: 'Global overview on the epidemiological situation of LSD'  
Workshops with representatives from local government, farmers association and livestock markets actors (sellers, buyers, middlemen) in Northern Nigeria – May 2024*

## TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAHA Members?

Yes

a) Technical visit : 0

b) Seminars : 1

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 |
|--|---|---|
| B  | INDONESIA   | 25  |
| C  | INDONESIA   | 1   |

## TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

| Quality management system adopted | Certificate scan (PDF, JPG, PNG format) |   |
|-----------------------------------|---|---|
| ISO 17025                         | UKAS accreditation (PDF)                | UKAS accreditation for Pirbright 2024.pdf |

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19. Is your quality management system accredited?

Yes

| Test for which your laboratory is accredited | Accreditation body |
|--|--------------------|
| ELISA  | UKAS               |
| Real-time PCR (Bowden et al)                 | UKAS               |

20. Does your laboratory maintain a "biorisk management system" for the pathogen and the disease concerned?

Yes

All our management systems are built around UK legislation, some is based on WHO and WOA, but not directly translatable as it's updated into UK law before it's applied. All facilities have their operational risk assessment and specific activity risk assessments where required. We have a process in place for reporting incidents relating to biorisk, including an investigation process and lessons learned. There is also an inspection and audit programme which monitors compliance with Biorisk related legislation including SAPO, COSHH (where it relates to human pathogens), and GM (contained use). We are inspected by the HSE as part of a proactive intervention plan, where parts of our biorisk management system are scrutinised and sampled to check compliance and we are also visited and inspected by the National Counter Terrorism Security Office (NaCTSO) to ensure any 'dual-use' materials are being held securely.

## TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOA?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOA?

Yes

| Title of event  | Date       | location        | Role (speaker, presenting poster, short communications) | Title of the work presented   |
|---|------------|-----------------|---|---|
| WOAH Workshop on Lumpy Skin Disease Control in South Asia | 2024-08-04 | Katmandu, Nepal | Speaker   | Global overview on the epidemiological situation of LSD Vaccination and post vaccination monitoring |

## TOR10: NETWORK WITH WOA REFERENCE LABORATORIES

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

Yes

24. Do you network (collaborate or share information) with other WOA Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOA Reference Laboratories designated for the same pathogen during the past 2 years?

Yes

| Purpose of the proficiency test: | Role of your Reference Laboratory (organiser/ participant) | No. participating Laboratories | Participating WOA Ref. Labs/ organising WOA Ref Lab |
|----------------------------------|--|--------------------------------|---|
|----------------------------------|--|--------------------------------|---|

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|   |             |    |                                |
|---|-------------|----|--------------------------------|
| The aim of this PT was to evaluate the ability of the participating laboratories to identify the absence or presence of antibodies to capripox (CAPX) viruses in serum of ruminants and/or to assess the ability of the participating laboratories to detect CAPX virus DNA in different matrices | Participant | 11 | Organiser - Sciensano, Belgium |
|---|-------------|----|--------------------------------|

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

No

## TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen during the past 2 years?

Yes

| Purpose for inter-laboratory test comparisons <sup>1</sup> | Role of your reference laboratory (organizer/participant) | No. participating laboratories | Name of the test | WOAH Member Countries |
|--|---|--------------------------------|------------------|-----------------------|
|--|---|--------------------------------|------------------|-----------------------|

The aim of this PT was to evaluate the ability of the participating laboratories to identify the absence or presence of antibodies to capripox (CAPX) viruses in serum of ruminants and/or to assess the ability of the participating laboratories to detect CAPX virus DNA in different matrices

Participant

11

ELISA and PCR

AUSTRIA, GERMANY, INDONESIA, KOREA (REP. OF), MALAYSIA, SWITZERLAND, THAILAND, UNITED KINGDOM, VIETNAM,

## TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOA?

No

29. Additional comments regarding your report:

Yes

*Dr Limon-Vega has been providing advice to the UK and giving input on discussion regarding renewal of LSDV vaccine banks and a rapid risk assessment for LSD entry to the UK following the report of case in Tunisia.*

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*The Pirbright institute has invested resource into preparing BVDV free stocks of capripoxvirus reference strains.  
We continue to make our large collection of capripoxviruses and related reagents available on request.*