

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-03-02 00:00:00

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Bluetongue
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Name (including Title) of Head of Laboratory (Responsible Official):	Nicola D'Alterio, DVM General Director Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise. Teramo, Italy
Name (including Title and Position) of OIE Reference Expert:	Giovanni Savini , DVM, PhD. Head of the Animal Health Department and Virology and Cell Culture Unit. Istituto Zooprofilattico Sperimentale dell' Abruzzo e del Molise Teramo, Italy
Which of the following defines your laboratory? Check all that apply:	Governmental

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		Nationally	Internationally
c-ELISA	Yes	5,452	0
VNT	Yes	81,790	8,870
Direct diagnostic tests		Nationally	Internationally
Genotype specific Real-time RT-PCR	Yes	4,963	493
Serotype specific PCR real time	No	8,204	150
KC + VERO cell culture	Yes	484	15
Microscopic examination <i>Culicoides imicola</i>	No	3,116	0
Microscopic examination <i>Culicoides</i> spp.	No	440	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?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
BTV inactivated reference strain	RT Real Time PCR	Produced	80 ml	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
BTV inactivated reference strain	RT Real Time PCR	Provide	128 ml	0	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antibody Test Kit c- ELISA rec VP7	c- ELISA	Produced	494 packages	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Antibody Test Kit c- ELISA rec VP7	c- ELISA	Provide	428 packages	0	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
c-ELISA antigen for 494 tests	c- ELISA	Produced	54 ml	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
VP7 monoclonal antibody	c- ELISA	Produced	20 ml	0	0	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East

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?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
THE NETHERLANDS	January	0	32
MALTA	February	14	0
TUNISIA	October	124	0
PAKISTAN	November	1,240	0

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
MALTA	Diagnostic assistance	Remote assistance
TUNISIA	Diagnostic assistance	Remote assistance
UNITED ARAB EMIRATES	Epidemiological support	Remote assistance
PAKISTAN	Diagnostic assistance	Internship
MONTENEGRO	Diagnostic assistance	Remote assistance to Balkan states and in loco

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
Horizon 2020 Call: H2020-SFS-2016-2017 Proposal number: 727393-1 "PALE-Blu" "Understanding pathogen, livestock, environment interactions involving bluetongue virus Horizon 2020"	4 years	A network of experts BTV European Institute, with partners in endemic region of Africa the Middle East and Turkey, to increase the accuracy of BTV-strain distribution maps, to identify pathways and mechanisms for spread into and within Europe, as well as appropriate prevention strategies. These studies will provide a better understanding of incursion risks for different BTV strains, supporting effective control strategies.	The Pirbright Institute, Agence Nationale De Securite Sanitaire De L'alimentation,De L'environnement Et Du Travail, Centre De Cooperation International En Recherche Agronomique Pour Le Developpement , Friedrich Loeffler Institut, Environmental Research Group Oxford Limited, Universite Libre De Bruxelles, Instituto Nacional De Investigacion Y Tecnologia Agraria Y Alimentaria, Stichting Dienst Landbouwkundig Onderzoek, University Of Glasgow, Kimron Veterinary Institute, Universidad Complutense De Madrid, Statens Veterinaermedicinska Anstalt, Kafkas Universitesi,Institut Agronomique Et Veterinaire Hassan li, The University Of Nottingham, International Livestock Research Institute, Institut Senegalais De Recherches Agricoles	BELGIUM FRANCE GERMANY ISRAEL KENYA MOROCCO SENEGAL SPAIN SWEDEN TUNISIA UNITED KINGDOM
OIE twinning contract on the establishment of OIE collaborating centre on camel diseases in Abu Dhabi-UAE	5 years	The network should build up processes and tools to facilitate the diagnosis and control of the most important diseases of camelids, share information and standardize and validate diagnostic tests in line with OIE standards and guidelines.	IZSLER, IZSSI, Italian Ministry of Health ADFQA, OIE	FRANCE ITALY UNITED ARAB EMIRATES
OIE Twinning contract for Bluetongue between Istituto Zooprofilattico Sperimentale dell' Abruzzo e del Molise and Istituto Biologico of San Paolo	2 years	To enhance capacity and improve scientific capabilities in relation to diagnosis and surveillance of Bluetongue.	Instituto Biológico of São Paulo	BRAZIL

<p>Partnership for Research and Innovation in the Mediterranean Area (PRIMA) European Commission Project "A novel integrated and sustainable approach to monitor and control Bluetongue spread in the Mediterranean Basin" (BlueMed)</p>	<p>3 years</p>	<p>Setting up a comprehensive and flexible operating model capable to detect new incursions or circulation of BTV strains and prevent and/or control their spread in the Mediterranean region. To refine current diagnostic systems and explore the basis for improved control strategies.</p>	<p>National School of Veterinary Medicine of Sidi Thabet (ENMV)/ National Institute of Veterinary Research of Tunisia (IRVT) Tunisia, National Research Centre (NRC) Egypt, ANSES France</p>	<p>EGYPT FRANCE TUNISIA</p>
<p>ECDC- EFSA Vectornet. European network of medical and veterinary entomology</p>	<p>5 years</p>	<p>To create a sense of connection between medical and veterinary entomologists and professionals interested in vector-borne diseases in the Public and Veterinary Health sector. The VectorNet Entomological Network aims to better embed entomological monitoring and knowledge in national and international vector-borne disease surveillance systems.</p>	<p>Avia-GIS, ERGO - Environmental Research Group Oxford, CIRAD - French Agricultural Research Centre for International Development, Hacettepe University, PHE - Public Health England, RIVM - Dutch Institute for Public Health and the Environment, CUNI, Charles University, Czech Republic, CIISA - Centro de Investigação Interdisciplinar em Sanidade Animal, Portugal, CRESA - Centre de Recerca en Sanitat Animal, Spain, DTU - Danmarks Tekniske Universitet, Denmark, EBC, evolutionary Biology Centre, Uppsala University, Sweden, FLI - Friederich-Loeffler-Institut, Germany, IAH, Institute of Animal Health, Pirbright Institute, UK, IRD - Institut de Recherche pour le Développement, France, IVB - Institute of Vertebrate Biology, KAU, Kafkas University, Turkey, NoviSad University, Serbia, Primarska University, Slovenia, VECPAR - Transmission Vectorielle et épidémiologie des Maladies Parasitaires, Reims University, Zaragoza University, Spain</p>	<p>CZECH REPUBLIC DENMARK FRANCE GERMANY PORTUGAL SLOVENIA SPAIN SWEDEN TURKEY UNITED KINGDOM</p>

Enhancing Research for Africa Network -ERFAN	5 years	ERFAN is a strategic platform to build fruitful collaborations for both African countries and Italian institutions, allowing a continuous and updated knowledge of animal and human health conditions in relation to the African continent	INMV, Algeria DSV, Algeria NCAH, Libya ONSSA, Morocco ONARDEL, Mauritania LNERV, Senegal NRC, Egypt ENMV, Tunisia IRVT, Tunisia ENMV, Tunisia	ALGERIA EGYPT LIBYA MAURITANIA MOROCCO SENEGAL TUNISIA
Point-of-incidence toolbox for emerging virus threats (TELE-Vir)	2 years	To develop a very fast point-of-incidence (poi) toolbox for identification and characterization of emerging virus threats for humans and/or domestic and wildlife animals.	INSA, Portugal, Sciensano, Belgium, INIA-CISA, Spain, PIWET, Poland VRI, Czech Republic, SVA, Sweden, ANSES, France, UoS, UK, NVI, Norway, IZSLER, Italy, SSI, Denmark	BELGIUM CZECH REPUBLIC DENMARK FRANCE ITALY NORWAY POLAND PORTUGAL SPAIN SWEDEN UNITED KINGDOM
EuropeAid140314/DH/SER/Multi - SANTE/2018-G-046 EU Regional action on animal disease eradication in the Western Balkans (ADEWB) Project	3 years	Design a controlling strategy for BTv in the Balkan peninsula	Albania, Kosovo , North Macedonia, Montenegro; Serbia; Romania; Bosnia Erzegovina	ALBANIA BOSNIA AND HERZEGOVINA MONTENEGRO ROMANIA SERBIA
Call n° CHAFEA/LUX/2020/OP/0005 - Chafea/2020/BTSF/01: Organisation and implementation of training activities on the new EU Animal Health Law under the "Better Training for Safer Food" initiative	2 years	Training course aiming at spreading knowledge, disseminating best practices for official policies and controls in the animal health area and favouring exchange of experience in order to increase the level of expertise with regard to the rules introduced by the new EU AHL legal framework, and the level of consistency of their implementation across EU	Representative of EU member States	AUSTRIA BELGIUM DENMARK FRANCE GERMANY ITALY POLAND PORTUGAL SPAIN

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:
-Data related to the BTV-3 outbreaks occurring in Tunisia in 2021 -Data related to the BTV-4 outbreaks occurring in Tunisia in 2019-2020 and 2021 -Data on the circulation of BTV-26 in Tunisia

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:
-Sequencing of BTV-3 strain circulating in Sardinia in 2020-21 -Sequencing of BTV-4 strain circulating in Sardinia in 2021 -Sequencing of BTV-X strain circulating in Sardinia in 2021 -Sequencing of BTV atypical strains circulating in Northern Italy in 2021 -Serological surveillance to investigate the presence and spread of BTV-26 in Tunisia

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

1_van Rijn PA, Maris-Veldhuis MA, Spedicato M, Savini G, van Gennip RGP. Pentavalent Disabled Infectious Single Animal (DISA)/DIVA Vaccine Provides Protection in Sheep and Cattle against Different Serotypes of Bluetongue Virus. *Vaccines* (Basel). 2021 Oct 9;9(10):1150. doi: 10.3390/vaccines9101150. PMID: 34696258; PMCID: PMC8537505.

2_Goffredo, M.; Quaglia, M.; De Ascentis, M.; d'Alessio, S.G.; Federici, V.; Conte, A.; Venter, G.J. The Absence of Abdominal Pigmentation in Livestock Associated Culicoides following Artificial Blood Feeding and the Epidemiological Implication for Arbovirus Surveillance. *Pathogens* 2021, 10, 1571. <https://doi.org/10.3390/pathogens10121571>

3_Mahmoud A, Danzetta ML, di Sabatino D, Spedicato M, Alkhatal Z, Dayhum A, Tolari F, Forzan M, Mazzei M, Savini G. First seroprevalence investigation of epizootic haemorrhagic disease virus in Libya. *Open Vet J.* 2021 Apr-Jun;11(2):301-308. doi: 10.5455/OVJ.2021.v11.i2.15. Epub 2021 Jun 21. PMID: 34307088; PMCID: PMC8288730.

b) International conferences: 12

1. Online Tele-Vir meeting_Savini G., Lorusso A_25 January, 22 April, 18 June, 29 September 2021

2. Online ERFAN nr 33 WorkingGroup meetings. February and December 2021

3. Online annual Meeting twinning with IZSAM and Abu Dhabi Food Control Authority (ADFCA) Animal Health Centre for Diagnostic and Research - UAE_Savini G._11 and 18 March 2021_

4. Online OHEJP SSB meeting_Savini G._18 March and 15 September 2021

5. Workshop in Montenegro for Regional bluetongue control_Savini G._ Oral presentation "ADEWB Project proposal: Coherent strategy for regional approach in bluetongue control"_ Podgorica, Montenegro_8-9 July 2021

6. Online ERFAN Round table. July 2021

7. Online ERFAN First General Meeting- First and Second Day. October 2021

8. Meeting Discontools, 20 October 2021. Bruxelles, Belgio Poster "Knowledge gaps for Bluetongue prevention and control" M. Spedicato, L. Teodori, O. Portanti, M. Piscicella, B. Bonfini, A. Leone, G. Savini

9. EuropeAid140314/DH/SER/Multi -SANTE/2018-G-046 EU Regional action on animal disease eradication in the

Western Balkans (ADEWB) Project_ Online meeting 26 October 2021

10. Online meeting Bluemed. 5 November 2021

11. Online annual meeting on EpiTrap. G.Savini. 6 December 2021

12. Webinar "EU African Horse Sickness and Bluetongue Reference Laboratories", 13-14 December 202. Savini G, Lorusso A and Marcacci M . Oral Presentation "BTV4 situation in Mediterranean basin" and "Strategies of NGS in Orbivirus"

c) National conferences: 2

1_Online webinar "I risultati della ricerca corrente condotta dall'Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale". Anno 2020.".17 June 2020

2_Online webinar " Giornata di studio sulla Bluetongue"23 November 2021. Lorusso A. Oral presentation "BTV update"

d) Other:

(Provide website address or link to appropriate information) 1

A public web site (www.izs.it) disseminating information and data on Bluetongue is continuously updated in order to have:

- the latest on the Italian and European Regulations issued by the Italian Ministry of Health;
- the current (2021) and past (2008-2020) epidemiological situations in Italy;
- weekly updated maps on entomological and serological surveillance activities (bluetongue national information system);
- the current epidemiological situations in the Mediterranean Basin;
- rules and regulations
- an scientific documents on-line.

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: 0

d) Internships (>1 month): 1

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
d	Pakistan	1

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	ACCREDIA_IZSAM_Italy.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
VNT	ACCREDIA
c-ELISA	ACCREDIA
Genotype specific Real-time RT-PCR	ACCREDIA
Kc+VERO cell culture	ACCREDIA

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?

Yes

National/ International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
National	I risultati della ricerca corrente condotta dall'Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale". Anno 2020	Italian Ministry of Health	06/21	online	80
National	Giornata di studio sulla Bluetongue	Italian Ministry of Health	11/21	online	205
International	1_ERFAN nr 33 Working Group meetings 2_ERFAN Round table	34 ERFAN partners	2-12/21 and 7/21	online	150 and 71
International	ERFAN First General Meeting- First and Second Day	34 ERFAN partners	10/2021	Rome and online	62
International	Blue Med meeting	Blue Med Partners	10/2021	online	12

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
Tele-Vir meeting	01/2021 04/2021 06/2021 09/2021	Online	Auditor	/
Annual Meeting twinning with IZSAM and Abu Dhabi Food Control Authority (ADFCA) Animal Health Centre for Diagnostic and Research - UAE	03/2021	Online	Auditor	/
OHEJP SSB meeting	03/2021 09/2021	Online	Auditor	/
Workshop in Montenegro for Regional bluetongue control	7/2021	Podgorica, Montenegro	Speaker	ADEWB Project proposal: coherent strategy for regional approach in bluetongue control
Meeting Discontools	10/2021	Bruxelles, Belgio	Presenting poster	Knowledge gaps for Bluetongue prevention and control
EuropeAid140314/DH/SER/Multi-SANTE/2018-G-046 EU Regional action on animal disease eradication in the Western Balkans (ADEWB) Project_ Online meeting	10/2021	online	Speaker	Bluetongue control strategy
Blue Med meeting	10/2021	online	Speaker	A novel integrated and sustainable approach to monitor and control Bluetongue spread in the Mediterranean Basin
Webinar "EU Bluetongue Reference Laboratories"	12/2021	online	Speaker	BTV4 situation in Mediterranean basin" and "Strategies of NGS in Orbivirus"
Better Training for Safer Food. Virtual classroom	12/2021	online	Speaker	Workshop: How to design a surveillance and eradication programme for a C listed disease
Annual meeting Epitrap	12/2021	online	Auditor	/

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?

Yes

Purpose of the proficiency tests: ¹	Role of your Reference Laboratory (organiser/participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Detection of BTV and serotyping in blood samples (Real Time RT-PCR)	Participant	Information not available at the moment	Information not available at the moment
Detection of BTV antibody in serum samples (c-ELISA)	Participant	Information not available at the moment	Information not available at the moment

¹ validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.

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
OIE Bluetongue reference laboratories network (OIE-BTNet)	Sharing reagents, updating, revising and validating the protocols of old procedures and adding new diagnostic procedures	All the OIE BT reference laboratories
Understanding pathogen, livestock, environment interactions involving bluetongue virus_Pale Blu	A network of experts BTV European Institute, with partners in endemic region of Africa the Middle East and Turkey, to increase the accuracy of BTV-strain distribution maps, to identify pathways and mechanisms for spread into and within Europe, as well as appropriate prevention strategies. These studies will provide a better understanding of incursion risks for different BTV strains, supporting effective control strategies	Pirbright Institute

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
Detection of BTV and serotyping in blood samples (Real Time RT-PCR)	19	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Detection of BTV antibody in serum samples (c-ELISA)	32	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" 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)
ad hoc Group	online meeting	BTV surveillance plan
ad hoc Group	online meeting	Bluetongue control strategy
Sardinia Region, Italian Ministry of Health	online meeting	Emergency task force

25. Additional comments regarding your report:

Activities were affected by the COVID-19 emergency