OIE Reference Laboratory Reports Activities

Activities in 2013

This report has been submitted : 2014-01-31 18:41:44

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	West Nile Fever
Address of laboratory:	Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale" (IZSAM) Via Campo Boario, 64100 Teramo ITALY
Tel.:	+39 0861 33.24.40
Fax:	+39 0861 33.22.51
e-mail address:	f.monaco@izs.it
website:	www.izs.it
Name (including Title) of Head of Laboratory (Responsible Official):	Fernando Arnolfo Director General Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale"
Name (including Title and Position) of OIE Reference Expert:	Federica Monaco, Head of the diagnosis and surveillance of exotic viral diseases of animals laboratory Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale"
Which of the following defines your laboratory? Check all that apply:	Governmental

ToR: 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	
Indirect diagnostic tests		Nationally	Internationally
ELISA IgG	Yes	5.619	
ELISA IgM	Yes	657	131
Virus neutralization (microtitre format)	Yes	2.664	715
Plaque Reduction neutralization test (PRNT)	Yes	471	
Direct diagnostic tests		Nationally	Internationally
Cell Culture (Vero)	Yes	106	22
Real-time RT-PCR WNV lineage 1	Yes	297	22
Real-time RT-PCR WNV lineage 2	Yes	307	22
Real-time RT-PCR WNV lineages 1 and 2	Yes	4.658	149
IF (Flavivirus Group)	No	106	

ToR: 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
Control positive equine serum	Virus neutralization (microtitre format) and PRNT	Produced		2 ml	1	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☒Middle East
Control negative equine serum	Virus neutralization (microtitre format) and PRNT	Produced		2 ml	1	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☒Middle East
WNV monoclonal antibody	IF	Produced	800 ul			☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East
WNV strain Eg101	Real-time RT-PCR and Cell Culture	Produced		1 ml	1	☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☒Middle East
WNV strain NY99	Real-time RT-PCR and Cell Culture	Produced	6 ml			☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East
RNA from WNV strain Rabensburg	Real-time RT-PCR	Produced	500 ul			☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East
RNA from WNV strain B956	Real-time RT-PCR	Produced	250 ul			☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East
RNA from WNV Italian isolate 2012	Real-time RT-PCR	Produced	250 ul			☐Africa ☐Americas ☐Asia and Pacific ☐Europe ☐Middle East

4. Did your laboratory produce vaccines?

No

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

No

ToR: 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?

Yes

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

No

Name of the new test or diagnostic method or vaccine developed	Description and References (Publication, website, etc.)
Rapid molecular detection and genotyping of West Nile Virus lineages 1 and 2 by Real Time PCR and Melting Curve Analysis	Submitted to Journal of Virological Methods

ToR: 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
SERBIA	October	147	
BOSNIA AND HERZEGOVINA	September		2
ZIMBABWE	February	399	
TUNISIA	May	133	
TURKEY	May	545	
CROATIA	June	37	

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
TURKEY	To provide support to the Etlik Veterinary Control Central Research Institute to enhance capacity and improve scientific capabilities in relation to diagnosis and surveillance of West Nile Disease	Twinning
CROATIA	Support to interpret the diagnostic results and to draw a national surveillance plan	Remote assistance
SERBIA	Support to interpret the diagnostic results	Remote assistance

ToR: 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)
Origin and evolution of recent vector-borne virus incursions in the Mediterranean Basin	3 years	Assessment of the role played by the most common species of migrating birds in the new recent WNV and USUV incursions; Study on the prevalence and possible genetic evolution of USUV and WNV isolates circulating in Italy and in Mediterranean Countries correlated to their pathogenicity; Development of diagnostic techniques to identify and characterize the different strains of Flaviviruses.	Institut de la Recherche Vétérinaire Biopharma Croatian Veterinary Institute
Transnational network for early detection of emerging animal diseases in the Mediterranean Basin	3 years	Development and validation of a network for the collection and the analysis of data generated from surveillance systems; Analysis of environmental variables related to vector/disease association; Evaluation of inactivated and recombinant WNV vaccines used in Morocco.	Biopharma; Institut de la Recherche Vétérinaire; National Center for Zoosanitary Vigilance.
Twinning project to strength the skill of the National Center for Zoosanitary Vigilance (CNVZ)	3 years	To strength the skill of the CNVZ personnel on risk analysis and animal surveillance on vector borne diseases	National Center for Zoosanitary Vigilance

ToR: 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

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

Yes

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: 8
- Savini G., Puggioni G., Di Gennaro A., Di Francesco G., Rocchigiani A.M., Polci A., Marini V., Pinoni C., Rolesu S., Marruchella G., Lorusso A. & Monaco F.. 2013. West Nile virus lineage 2 in Sardinian wild birds in 2012: a further threat to public health. Epidemiol Infect, doi:10.1017/S0950268812003147.
- Calzolari M., Monaco F., Montarsi F., Bonilauri P., Ravagnan S., Bellini R., Cattoli G., Cordioli P., Cazzin S., Pinoni C., Marini V., Natalini S., Goffredo M., Angelini P., Russo F., Dottori M., Capelli G. & Savini G. 2013. New incursions of West Nile virus lineage 2 in Italy in 2013: the value of the entomological surveillance as early warning system. Vet Ital, doi: 10.12834/VetIt.1308.04. [Epub ahead of print].
- Cito F., Narcisi V., Danzetta M. L., Iannetti S., Di Sabatino D., Bruno R., Carvelli A., Atzeni M., Sauro F. & Calistri P. 2013. Analysis of Surveillance Systems in Place in European Mediterranean Countries for West Nile Virus (WNV) and Rift Valley Fever (RVF). Transboundary and Emerging Diseases, 60 (Suppl. 2), 40–44.
- Calistri P., Ippoliti C., Candeloro L., Benjellounb A., El Harrak M., Bouchrad B., Danzetta M. L., Di Sabatino D., Conte A. 2013. Analysis of climatic and environmental variables associated with the occurrence of West Nile virus in Morocco. Prev Vet Med 110, 549– 553.
- Capelli G., Ravagnan S., Montarsi F., Ciocchetta S., Cazzin S., Bonfanti L., Di Gennaro A., Portanti O., Mulatti P., Monne I., Cattoli G., Cester G., Russo F., Savini G. & Marangon S.2013. A West Nile lineage 2 Greece-2010 strain-like in Culex pipiens of north-eastern Italy. Vet Ital, Sep 4. doi: 10.12834/VetIt.1304.02. [Epub ahead of print]
- Mazzei M., Savini G., Di Gennaro A., Macchioni F., Prati C., Rojas Guzmàn L. & Tolari F. 2013 West Nile virus antibodies in Bolivian horses. Vector born and zoonotic diseases Vector Borne Zoonotic Dis, 2013 Oct 9. [Epub ahead of print]
- Pem-Novosel I., Vilibic-Cavlek T., Gjenero-Margan I., Pandak N., Peric L., Barbic L., Listes E., Cvitkovic A., Stevanovic V.& Savini G. 2013. First outbreak of West Nile virus neuroinvasive disease in humans, Croatia. Vector-Borne and Zoonotic Diseases, ahead of print. doi:10.1089/vbz.2012.1295. Online Ahead of Print: November 27, 2013.
- Engler O., Savini G., Papa A., Figuerola J., Groschup M., Kampen H., Medlock J., Vaux A., Wilson A., Werner D., Jost H., Goffredo M., Capelli G., Federici V., Tonolla M., Patocchi N., Flacio E., Portmann J., Rossi-Peruzzi A., Mourelatos S., Ruiz S., Vazquez A., Calzolari M., Bonilauri P., Dottori M., Schaffner F., Mathis A. & Johnson N. 2013. European Surveillance for West Nile Virus in Mosquito Populations. International Journal of Environment Research and Public Health, 10(10),4869-95. doi: 10.3390/ijerph10104869. PMID:24157510 [PubMed - in process]

b) International conferences: 5
- Monaco F. “Cocirculation of Flaviviruses in Italy”. Annuale meeting of the national reference laboratories for West Nile Fever, 10 October 2013, Maisons Alford, France.(oral presentation)
- Savini L., Calistri P., Di Lorenzo A., Tora S., Bruno R., Di Sabatino D., Pelini S., Cioci D., Conte A. A Web Based Geographic Information System to Manage WNV incursion in the Mediterranean Basin. Risk Analisys in the Mediterranean Basin, 2013 Conference, Teramo, 5-7 November 2013.(oral presentation)
- Goffredo M. “Ten years of entomological surveillance in Italy: highlights on Culicoides- and Mosquito-borne diseases”, “Advances in development of early warning tools for detection of vector borne diseases of animals, including zoonoses - focus on vectors”. Consultants meeting at the Animal Production and health Section, Joint FAO/IAEA Division, Vienna, 4-6 December 2013.(oral presentation)
- M. Spedicato, I. Carmine, A. L. Bellacicco, G. Marruchella, G. Di Francesco, V. Marini, M. Pisciella, F. Monaco, G. Savini. Experimental infection of pigeons (Columba livia) with Italian West Nile virus lineage 1 strains. 31st Veterinary Congress, Prague, Czech Republic, 17 -20 September 2013.
- Savini G. “West Nile Disease in Italy: animal surveillance activities as an early warning system for the prevention and control of the infection in humans”. IMED conference, 14-18 February 2013, Vienna, Austria.

Savini G. " Other vector borne diseases: General disease situation, emergence factors, control measures. Sub regional workshop on Lumpy Skin Disease and other vector borne diseases". 28 February 2013 Larnaca, Cyprus

c) National conferences: 1
- Monaco F. "Zoonosi trasmesse da vettori: vecchie ed emergenti ", oral presentation in the workshop "Focus sulle malattie zoonotiche e sulle infezioni difficili", 25 June, Rome.

d) Other:
(Provide website address or link to appropriate information) 2
The public web site (www.izs.it) disseminating information and data on West Nile is kept continuously updated in order to have:
 the latest on the Italian and European Regulations issued by the Italian Ministry of Health;
 the current (2013) and past (2008-2012) epidemiological situations in Italy;
 maps on entomological and serological surveillance activities;
 the current epidemiological situations in the Mediterranean Basin;
 scientific documents on-line.

In the framework of Arbozoonet project a WEB-GIS model has been designed and keep updated to collect and map WNF data coming from official notifications and from literature. (http://arbozoonet.izs.it/arbozoonet/)

ToR: 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: 3
b) Seminars: 0
c) Hands-on training courses: 5
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
a	Tunisia	1
c	Turkey	5
a	Morocco	2

ToR: 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 certified according to an International Standard?

Yes

Quality management system adopted
UNI EN 45001 norms, now to ISO/IEC 17025 obtained in 1995 by ACCREDIA (former SINAL - National System for the Accreditation of Test Laboratories)

16. Is your laboratory accredited by an international accreditation body?

Yes

Test for which your laboratory is accredited	Accreditation body
ELISA IgG	ACCREDIA
Plaque Reduction neutralization test (PRNT)	ACCREDIA
Virus neutralization (microtitre format)	ACCREDIA
Real-time RT-PCR WNV lineage 1	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 2012, Chapter 1.1.3 or Manual of Diagnostic Tests for Aquatic Animals 2012, Chapter 1.1.1)

ToR: 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
International	Risk Analysis as a tool for the control of Animal Diseases and Zoonoses in the Mediterranean Basin	--	11/2013	Teramo	100

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
Sub regional workshop on Lumpy Skin Disease and other vector borne diseases	02/2013	Larnaca, Cyprus	Speaker	Other vector borne diseases: General disease situation, emergence factors, control measures
12th Conference of the OIE Regional Commission for the Middle East	09/2013	Amman, Jordan	Speaker	Case study: lumpy skin disease and other vector borne diseases in the middle east

ToR: 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
Revision of the OIE Manual chapter on West Nile Fever	Updating and revising the protocols of old procedures and adding new diagnostic procedures	APHIS, USDA OIE Ref. Lab. For WN

ToR: 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
Determining a laboratory's capability to conduct specific diagnostic tests	5	☒Africa ☐Americas ☐Asia and Pacific ☒Europe ☒Middle East
Determining a laboratory's capability to conduct specific diagnostic tests	6	☒Africa ☐Americas ☐Asia and Pacific ☒Europe ☒Middle East
Harmonising existing test methods	33	☒Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East

ToR: 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)
Revision of chapter for WNF	Teramo	Harmonization of the diagnostic tests included in the West Nile Fever

25. Additional comments regarding your report: