

WOAH Reference Laboratory Reports Activities 2025

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LABORATORY INFORMATION

*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Viral encephalopathy and retinopathy
*Address of laboratory:	WOAH Reference Laboratory for Viral Encephalopathy and Retinopathy of Marine Fish, Fish virology Dep., Istituto Zooprofilattico Sperimentale delle Venezie (IZSve) Viale dell'Università, 10 35020 Legnaro (Padova), Italy
*Tel:	+39-049 808 43 88
*E-mail address:	atoffan@izsvenezie.it
Website:	https://www.izsvenezie.it/
*Name (including Title) of Head of Laboratory (Responsible Official):	Calogero Terregino, Director of the Specialized Virology and Experimental Research Unit/Director of the Research and Development Department (IZSve)
*Name (including Title and Position) of WOA Reference Expert:	Anna Toffan DVM, PhD, ECAAH, Head of the Fish Virology Department
*Which of the following defines your laboratory? Check all that apply:	Governmental

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 WOA Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
ELISA	No	46	1254
Direct diagnostic tests			
Cell Culture	Yes	10	26
Real-time RT-PCR(rRT-PCR)	No	783	818
Immunohistochemistry (IHC)	No	12	3
Molecular characterization (RT-PCR and sequencing analysis)	No	10	16
Immunofluorescence (IF)	No	6	4

TOR2: REFERENCE MATERIAL

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

No

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

Yes

Type of reagent	Related diagnostic test	Amount supplied	Amount supplied	No. of recipient WOA

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available		Produced/ provide	nationally (ml, mg)	internationally (ml, mg)	Member Countries	Country of recipients
E-11 cell	Virus isolation	produced	0	40 ml	2	CROATIA, MALAYSIA,
Inactivated Betanodavirus NNV (PT panel)	RT-PCR, rRT-PCR	stored	0	20 ml	2	CAMBODIA, TUNISIA,
Inactivated Betanodavirus RGNN/SJNNV	RT-PCR, rRT-PCR	stored	1 ml	0	1	ITALY,
Live betanodavirus RGNNV (research purpose)	Virus isolation, RT PCR, rRT PCR	produced	0	40 ml	1	AUSTRIA,
Live betanodavirus RGNNV/SJNNV (research purpose)	Virus isolation, RT PCR, rRT PCR	produced	0	100 ml	1	AUSTRIA,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHA Members?

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 WOAHA Standards for the designated pathogen or disease?

No

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

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

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

Name of WOAHA 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
ALGERIA	2025-01-13	IHC, Cell Culture, Real time PCR, PCR, Genotyping,	66	11
CAMBODIA	2025-12-01	Real time PCR	5	0
CROATIA	2025-03-22	Real time PCR, ELISA	372	0
CYPRUS	2025-07-18	Real time PCR	4	0
FRANCE	2025-01-03	Real time PCR, ELISA	105	0
GREECE	2025-04-30	Real time PCR, ELISA	912	0
ISRAEL	2025-01-17	Real time PCR	18	0
MALTA	2025-04-30	Real time PCR	53	0
MAURITIUS	2025-04-24	Real time PCR	5	0
PORTUGAL	2025-04-14	Real time PCR	16	0
SPAIN	2025-01-13	Real time PCR, PCR, Immunofluorescence, Cell Culture, Genotyping	530	12
THE NETHERLANDS	2025-05-09	Real time PCR	6	0
UNITED KINGDOM	2025-04-07	Real time PCR, Cell Culture	6	0

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

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Yes

Name of the WOA Member Country receiving a technical consultancy	Purpose	How the advice was provided
ALGERIA	Diagnosis and control of VER	Diagnostic support and training
CAMBODIA	Diagnosis and control of VER	Diagnostic support and training
CROATIA	Diagnosis and control of VER	Diagnostic support and training
CYPRUS	Diagnosis and control of VER	Diagnostic support and remote assistance
GREECE	Diagnosis and characterization of VER	Diagnostic support and consultancy during grouper die off; Manuscript preparation
ISRAEL	Diagnosis and control of VER	Diagnostic support and training
MALTA	Diagnosis (exclusion of) of VER	Diagnostic support and consultancy during tuna die off
MAURITIUS	Diagnosis (exclusion of) of VER	Diagnostic support and consultancy during red drum die off
SPAIN	Diagnosis and control of VER	Diagnostic support and remote assistance
TUNISIA	Cell culture and ELISA set up	Training and reagents provision. Manuscript preparation
PORTUGAL	Diagnosis and characterization of VER	Diagnostic support and consultancy during grouper die off; Manuscript preparation
UNITED STATES OF AMERICA	Remote assistance	Manuscript writing

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
AQUAE-STRENGHT	3 years	Strengthening capacity on aquatic animal health and epidemiological surveillance	Advisors: Norwegian Veterinary Institute - NORWAY • Technical University of Denmark – DENMARK • Centre for Environment, Fisheries and Aquaculture Science – UK Beneficiaries: Institut National des Sciences et Technologies de la Mer – Laboratoire D'Aquaculture – TUNISIA • Office National de Sécurité Sanitaire des Produits Alimentaires - MOROCCO • Ministry of Agriculture, Forestry and Rural Development – Israeli Veterinary Services and Animal Health – ISRAEL • Ministry of Agriculture, Forestry and Fisheries – Fisheries Administration (Maff) – CAMBODIA	CAMBODIA DENMARK ISRAEL MOROCCO NORWAY POLAND SPAIN TUNISIA UNITED KINGDOM
WOAH Twinning Project between IZSVe and Jeddah Fish Health and Safety Laboratory (JFHSL). Kingdom of Saudi Arabia (KSA)	3 years	Improving the diagnosis of marine aquaculture diseases with a focus on emerging fish diseases	Jeddah Fish Health and Safety Laboratory (JFHSL). Kingdom of Saudi Arabia (KSA)	ITALY SAUDI ARABIA

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

Yes

Research need : 1

Please type the Research need: The withdrawal of the chapter devoted to Viral encephalopathy and retinopathy in the new edition of the WOA Aquatic Code brought to light some regulatory gaps and the need for additional technical documents. In particular, the lack of guidelines recommending the recognised laboratory methods has emerged

Relevance for WOA Standard Setting,

Relevance for the Code or Manual Code, Manual,

Field Epidemiology and Surveillance, Diagnostics,

Animal Category Aquatic,

Disease:

Kind of disease (Zoonosis, Transboundary diseases) Transboundary diseases,

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer:

Notes:

Answer:

TOR6: EPIZOOLOGICAL DATA

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:

Data repository of NNV strains/sequences collected during mortality events in groupers (*Epinephelus* spp.) and other wild fish in the Mediterranean basin; Data collected from NNV outbreaks in European hatchery of sea bream; Data obtained from questionnaires sent in the frame of the proficiency test organized by the RL

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:

- Through the publication of peer reviewed articles at international level and supporting other laboratories in manuscript writing; through the participation in international scientific conferences (i.e. organised by EAFP-European Association of fish Pathology, EAS- European Aquaculture Society).
- The European Virus Archive (EVA), established through the EVAg project under the Horizon 2020 research program, was registered in March 2025 as EVA-AISBL (Association Internationale Sans But Lucratif). The members of EVA-AISBL include public health agencies, academic institutions, veterinary institutes, and research centers across seven European countries and the United Kingdom—as well as the United States. By supporting basic research, fostering innovation in the development of vaccines, antiviral agents, and diagnostic tools, and distributing reference materials worldwide, EVA-AISBL plays a crucial role in strengthening preparedness and response capacity to viral epidemics. The RL participates in the EVA-AISBL project by making available its collection of viruses.

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:

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1. Agrebi H, Abbad M, Buratin A, Biasini L, Sghaier H, Bouhaouala-Zahar B, Toffan A, Cherif N. Near-complete genome sequence of a reassortant fish nervous necrosis virus isolated from a European sea bass (*Dicentrarchus labrax*) in Tunisia. *Microbiol Resour Announc*. 2025 Sep 12:e0005825. doi: 10.1128/mra.00058-25. Epub ahead of print. PMID: 40938097.

2. Benmokrane, S., Mezali, K., Biasini, L., Buratin, A., Berto, P., & Toffan, A. (2025, November). Viral nervous necrosis mortality in wild grouper from Central and Western Algeria. *Bulletin of the European Association of Fish Pathologists*. <https://doi.org/10.48045/001c.147551>
3. Esposito E, Oliviero M, Iaccarino D, Paduano G, Serra F, Levante M, Amoroso MG, Paradiso R, Rinaldi A, Borriello G, Pretto T, Toffan A, Fusco G, Carlo E, Nocera FD. (2025) First Detection of RGNNV Betanodavirus Genotype in *Dactylopterus volitans* (Linnaeus, 1758) and *Balistes capriscus* (Gmelin, 1798). *J Fish Dis*. 2025 Jun 18:e70006. doi: 10.1111/jfd.70006. Epub ahead of print. PMID: 40528747.
4. Mukiibi R, Ferrareso S, Franch R, Peruzza L, Dalla Rovere G, Babbucci M, Bertotto D, Toffan A, Pascoli F, Faggion S, Peñaloza C, Tsigenopoulos CS, Houston RD, Bargelloni L, Robledo D. (2025) Integrated functional genomic analysis identifies regulatory variants underlying a major QTL for disease resistance in European sea bass. *BMC Biol*. 2025 Mar 11;23(1):75. doi: 10.1186/s12915-025-02180-4. PMID: 40069747; PMCID: PMC11899128.
5. Lovy J, Abbadì M, Toffan A, Das N, Neugebauer JN, Batts WN, Clarke PJ. Detection and Genetic Characterization of Red-Spotted Grouper Nervous Necrosis Virus and a Novel Genotype of Nervous Necrosis Virus in Black Sea Bass from the U.S. Atlantic Coast. *Viruses*. 2025 Sep 10;17(9):1234. doi: 10.3390/v17091234. PMID: 41012662; PMCID: PMC12474048.
6. Peruzza L, Dalla Rovere G, Ferrareso S, Franch R, Bertotto D, Pascoli F, Bacchin G, Toffan A, Bargelloni L. (2025). Temporal profiling of host transcriptome highlights time- and tissue-dependent Interferon pathway activation in NNV-infected European sea bass. *Sci Rep*. 2025 Jul 10;15(1):24941. doi: 10.1038/s41598-025-09705-5. PMID: 40640366; PMCID: PMC12246263.
7. Gomes I, Novoa Pabon A. M., Abbadì M., Pretto T., Rosa J., Silva L. M., Torres P., Marsella A., Afonso P., Toffan A. (2025). Marine Heatwave associated Betanodavirus outbreak in wild groupers of the Azores. *Front. Mar. Sci.*, 17 December 2025. *Sec. Global Change and the Future Ocean*. Volume 12 - 2025 | <https://doi.org/10.3389/fmars.2025.1712250>
8. Toffan A., Marsella A., Menconi V., Bertola M. (2025) Finfish infectious diseases in the Mediterranean basin: A systematic review with insights on vaccination possibilities. *Fish Shellfish Immunol*. 2025 Feb 13;160:110189. doi: 10.1016/j.fsi.2025.110189. Epub ahead of print. PMID: 39954831.

b) International conferences:

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1. Berto P, Biasini L., Buratin A., Marsella A., Pretto T, Toffan A., & Pascoli F. (2025). Viral Nervous Necrosis in *Sparus aurata*: results from long term infection (Abstract P7195). In *22nd International Conference on Diseases of Fish and Shellfish EAFP 2025, Heraklion, Greece, 1–4 September 2025*.
2. Pascoli, F., Berto, P., Biasini, L., Buratin, A., Marsella, A., & Toffan, A. (2025). Preliminary results on investigation of vertical transmission of Betanodavirus in *Sparus aurata* (Abstract P2 7176). In *22nd International Conference on Diseases of Fish and Shellfish EAFP 2025, Heraklion, Greece, 1–4 September 2025*.
3. Toffan, A. (2025). Wild fish VNN mortality in Italy and Greece in 2024. In *22nd International Conference on Diseases of Fish and Shellfish EAFP 2025, Workshop: Nodavirus in wild fish, Heraklion, Greece, 1–4 September 2025*.
4. Toffan, A., Abbadì, M., Pretto, T., Marsella, A., Biasini, L., Terlizzi, A., Di Nocera, F., Iaria, C., Peristeraki, N., Petihakis, G., Stamataki, N., & Katharios, P. (2025). Massive groupers die off due to Viral Nervous Necrosis and heatwave in Greece and Italy during 2024 (Abstract P1 7183). In *22nd International Conference on Diseases of Fish and Shellfish EAFP 2025, Heraklion, Greece, 1–4 September 2025*.
5. Toffan, A., Marsella, A., Abbadì, M., Pretto, T., Silva, L., Rosa, J., Novoa-Pabon, A. A., Gomes, I., & Afonso, P. (2025). Viral Nervous Necrosis outbreak affecting different grouper species in the Azorean archipelago (Abstract P5 7180). In *22nd International Conference on Diseases of Fish and Shellfish EAFP 2025, Heraklion, Greece, 1–4 September 2025*.
6. Varvara, C., Berto, P., Biasini, L., Buratin, A., Marsella, A., Pretto, T., Toffan, A., & Pascoli, F. (2025). Long-term persistence and putative vertical transmission of RGNNV/SJNNV betanodavirus in gilthead sea bream (*Sparus aurata*). *Aquaculture Europe 2025: Aquaculture for Everyone – Invest in Your Planet, European Aquaculture Society, Valencia, Spain, 22–25 September 2025*. Poster p. 1850.

c) National conferences:

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1. Abbadì, M., Lovy, J., Das, N., Neugebauer, J. N., Batts, W. N., Clarke, P. J., & Toffan, A. (2025). Detection and genetic characterization of Red-Spotted Grouper Nervous Necrosis Virus and a novel genotype of Nervous Necrosis Virus in black sea bass from the U.S. Atlantic coast. In *Atti del XXIX Convegno Nazionale S.I.P.I. – Società Italiana di Patologia Ittica* (p. 16). Sassari, 23–24 ottobre 2025.
2. Esposito, E., Oliviero, M., Iaccarino, D., Paduano, G., Serra, F., Levante, M., Amoroso, M. G., Paradiso, R., Rinaldi, A., Borriello, G., Pretto, T., Toffan, A., Fusco, G., De Carlo, E., & Di Nocera, F. (2025). First detection of RGNNV Betanodavirus genotype in *Dactylopterus volitans* (Linnaeus, 1758) and *Balistes capriscus* (Gmelin, 1798). In *Atti del XXIX Convegno Nazionale S.I.P.I. – Società Italiana di Patologia Ittica* (p. 52). Sassari, 23–24 ottobre 2025
3. Marsella A., Abbadì M., Pretto T, Buratin A., Biasini L., Terlizzi A., Di Nocera F, Iaria C., Peristeraki N., Petihakis G., Stamataki N., Katharios P, Silva L., Rosa J, Novoa-Pabon A., Gomes I., Afonso P., Toffan A. (2025) "Betanodavirus 2024 outbreaks severely affected groupers populations in european countries" *Atti del XXIX convegno nazionale S.I.P.I. Società Italiana di Patologia Ittica*. (p. 19) Sassari, 23-24 October 2025.
4. Pascoli, F., Berto, P., Biasini, L., Varvara, C., Buratin, A., Marsella, A., Pretto, T., & Toffan, A. (2025). Long-term persistence and putative vertical transmission of RGNNV/SJNNV betanodavirus in gilthead sea bream (*Sparus aurata*). In *Atti del XXIX Convegno Nazionale S.I.P.I. – Società Italiana di Patologia Ittica* (p. 20). Sassari, 23–24 ottobre 2025

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

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Projects at National level (2):

1. RC 13/22 VERTICAL – “Study on vertical transmission of immunity and VER virus infection in sea bream” (the RL participates as principal investigator). Funded by the Italian Ministry of Health

2. MTA for research purposes Between IZSve and University of Messina (March 2025)

Other projects (2):

1. EU COST ACTION - BIOAQUA Enhancing knowledge of BIOMolecular solutions for the well-being of European AQUAculture sector

2. Technical expert for the IAEA Project “AQUAVAC-IR: Establishing a National Certified Pipeline to Produce Aquaculture Vaccines by Irradiation”. Project Code UN5032

<https://www.iaea.org/projects/tc/tun5032>

Working groups (3):

1. Participation in the national network of the IIZZSS (Istituti Zooprofilattici Sperimentali) for the study of stranded aquatic animals. Through technical and scientific assistance to the Ministry of Health, the aim of the network is to develop surveillance strategies and disease control in aquatic populations that are vulnerable to stranding

2. Co-chair of the Strategic Working group FISH (Standing Committee on Agricultural Research SCAR –FISH)

3. Fish health Expert for the Scientific Advisory board of the EU PAHW- European Partnership on Animal Health & Welfare (PAHW)

4. FAO-GFCM (Food and Agriculture Organization - General Fisheries Commission for the Mediterranean - GFCM), TAGs Aquaculture (Technical Advisory Groups) expert

Participation as invited speaker (1)

Toffan, A. (2025) “Betanodavirus in a warmer marine environment”. Webinar “Climate Change – Rising Incidence of Aquatic Diseases” organized by FAO – GFCM - General Fisheries Commission for the Mediterranean, 05/03/2025

Links from IZSve's web site (3):

National reference laboratory for fish, crustacean and mollusc pathology / WOAHO reference laboratory for viral encephalopathy and retinopathy of marine fish

<http://www.izsvenezie.com/reference-laboratories/fish-crustacean-and-mollusc-pathology/>

IZSVE's contribution to AQUAE STRENGTH:

<https://www.izsvenezie.it/progetto-aquae-strength/>

Project BIOAQUA, innovative biomolecular solutions for more sustainable aquaculture

<https://www.izsvenezie.it/progetto-bioaqua/>

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit : 4

b) Seminars : 0

c) Hands-on training courses: 2

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	ALGERIA	2
A	CROATIA	4

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
UNI CEI EN ISO/IEC 17025:2018	ccreditation certificate 17025	17025.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Virus Isolation in Cell Cultures	ACCREDIA – Italian Accreditation System

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

Yes

The RL implements biorisk management measures to prevent disease among personnel and safeguard the community from potentially infectious pathogens. Special emphasis is placed on the safe transport of infectious substances in accordance with IATA guidelines and the UN classification system. Agents (pathogenic or infectious organisms, including Newcastle disease viruses) posing moderate hazards to personnel and the environment are handled under BSL-2 conditions. Since 2013, IZSVe has maintained a Biosafety Committee responsible for: 1. Assessing safety risks for personnel and the environment associated with BSL-3 activities involving microorganisms, animals, and Genetically Modified Microorganisms (GMOs); 2. Evaluating emergency procedures; Reviewing all management and operational procedures within BSL-3 laboratories and animal facilities, including potential biosecurity concerns. All Standard Operative Procedures (SOPs) and handling of pathogens are pathogen handling are conducted in accordance with the WHO Laboratory Biosafety Manual (4th Ed.). BSL-3 laboratory and animal facility operations follow the WHO Laboratory Biosafety Manual (4th Ed.). Biocontainment is ensured through regular maintenance, annual activity suspension for equipment and premises decontamination, and strict access control via self-closing, lockable doors positioned away from general corridors, as part of internal biosecurity protocols. However, the RL in the specific manages Risk Group 1 agents and operates under Biosafety Level 1 (BSL-1) protocols. Staff work with microorganisms that pose minimal risk to healthy adults, following established safety procedures without the requirement for specialized containment or isolation from surrounding facilities.

TOR9: SCIENTIFIC MEETINGS

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

No

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

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
WOAH Workshop on Identifying Priority Research Areas for Finfish Health WOAHP – STAR IDAZ	2025-02-18	Paris, France	Chairperson	Chairperson for Table 2 – Vaccine Training Sessions https://www.woah.org/app/uploads/2025/04/202504-star-idaz-woah-workshop-report-final.pdf

TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

Not applicable (only WOAHP Reference Laboratory designated for the disease)

24. Are you a member of a network of WOAHP Reference Laboratories designated for the same pathogen?

Not applicable (only WOAHP Reference Laboratory designated for the disease)

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

Not applicable (Only WOAHP Reference Laboratory designated for the disease)

Nota applicable

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

Not applicable (only WOAHP Reference Laboratory designated for the disease)

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

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

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAHP Member Countries
				AUSTRALIA, CAMBODIA,

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Fifth Proficiency Test (VER-IPT) 2024 Every two years the NRL organises and conducts the Viral Nervous Necrosis Interlaboratory Proficiency Test (VER-IPT) for molecular detection of Betanodavirus.	Organiser: The NRL organises and conducts the VER-IPT on Behalf of the WOAH	27	5th VER-IPT	CANADA, CROATIA, DENMARK, FRANCE, ISRAEL, ITALY, MOROCCO, PORTUGAL, SINGAPORE, SPAIN, THE NETHERLANDS, TUNISIA, TURKEY, UNITED KINGDOM,
CSIRO 2024 Molecular detection of the following viral agents: • Koi herpesvirus (KHV) • Megalocytivirus, represented in the panel by red sea bream iridovirus (MCV/RSIV) • Nervous necrosis virus (NNV) and • Spring viraemia of carp virus (SVCV)	Participant, Participants for WOAH member countries involved: check CSIRO website https://acdp.csiro.au/info/pt.aspx	42	Asia-Pacific Aquatic PT Program Fin fish diseases PCR– Organized by CSIRO https://acdp.csiro.au/info/pt.aspx	

TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
Mission in the frame of the WOAH AQUAE STRENGTH project	Cambodia 17-29/03/25	Training in loco sampling and diagnostic methods of fish diseases
Mission in the frame of the WOAH AQUAE STRENGTH project	Tunis, Tunisia 11-16/05/2025	Training in loco sampling and diagnostic methods of fish diseases
Mission in the frame of the WOAH AQUAE STRENGTH project	Casablanca, Morocco 09-12/09/25	Training in loco sampling and diagnostic methods of fish diseases
Meeting in the the frame of the WOAH AQUAE STRENGTH project Application of GIS technologies to support biosecurity and epidemiological analysis in aquatic animal health domain	Padova, Italy 06/02/2025	Invited speaker
Final meeting WOAH AQUAE STRENGTH project	Sassari, Italy 25/10/2025	Invited speaker
Member of the WOAH Aquatic Animals Collaborating Centres working group	Collaboration carried out throughout the year	Online meetings
Member of the Technical Committee del WOAH AQMENET (Aquaculture Middle East Network)	Collaboration carried out throughout the year	Participation in meetings

29. Additional comments regarding your report: