

WOAH Collaborative Centre Reports Activities 2025

This report has been submitted: 30 janvier 2026 15:04

CENTRE INFORMATION

*Title of WOA Collaborating Centre	Food-Borne Zoonotic Parasites Europa
*Address of WOA Collaborating Centre	Anses Maisons-Alfort
*Tel:	+33 (0)1 49.77.13.50
*E-mail address:	isabelle.vallee@anses.fr
Website:	www.anses.fr
*Name Director of Institute (Responsible Official):	Dr Gilles Salvat
*Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):	Dr Isabelle Vallée, Head of National Reference Laboratory for Foodborne Zoonotic Parasites
*Name of the writer:	Dr Isabelle Vallée

TOR 1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOA

Category	Title of activity	Scope
Disease control (true)	Continuous support for diagnostic services, along with scientific guidance to the competent authorities (Ministry of Agriculture, Accreditation body, EFSA) and routine laboratories.	Trichinella spp, Toxocara spp. Anisakidae, Toxoplasma gondii, Cryptosporidium, Giardia
Epidemiology, surveillance, risk assessment, (true)	Surveillance of Trichinella circulation within livestock, domestic animals, wildlife. Official tests by artificial digestion of meat allows the monitoring of the parasite circulation in pigs, horses and wildboars. A passive surveillance is also performed through the control of some wild animals. Ongoing research programmes for the detection of foodborne zoonotic parasites in animals (terrestrial and aquatic), food (mainly animal products and fresh vegetables).	Trichinella spp, Toxocara spp. Anisakidae, Toxoplasma gondii, Cryptosporidium, Giardia
		1/ Training for technician from veterinary services and successful results of laboratories to Ring Trial are necessary for laboratories to maintain their

--

Training, capacity building (true)	1/ Ongoing training courses for official tests of trichinella detection in meat ; 2/ Organisation of Ring trials for Trichinella detection in meat in French labs and EU & non-EU countries; 3/ Provision of Reference samples in France and and EU & non-EU countries; 4/ Ongoing training and supervision of students (future Technicians, Ingeneers, PhD) on research studies aiming to develop new tools for foodborne parasite control and/or monitoring.	accreditation (ISO 17025; ISO 18743) and agreement delivered by competent authority. 2/ Laboratories' performance was successfully evaluated for Trichinella detection in meat and serological detection of toxoplasmosis in small ruminants, allowing staff qualification. 3/ Proficiency samples for Trichinella detection were provided at national, european and International level for evaluation of individual performance of analysts, training of new analysts and maintenance of their habilitation. 4/ Trichinella spp, Toxoplasma gondii, Cryptosporidium spp, Giardia duodenalis, Anisakidae.
Zoonoses (true)	Research programs for: 1/ improvement of foodborne parasites detection in differents matrices (meat, fish/seafood, animal products, serum,or environmental sources (vegetables) 2 / development of new therapeutic approaches to control Cryptosporidium spp or Giardia in animals	Trichinella spp, Toxocara spp, Anisakidae, Cryptosporidium spp, Toxoplasma gondii
Wildlife (true)	Epidemiological investigations: Passive collection of data regarding the circulation of : 1/ Trichinella spp, Toxoplasma gondii and Toxocara spp in wildlife such as as wild boars, foxes; 2/ Cryptosporidium spp. in ruminants.	Trichinella spp, Toxocara spp, Toxoplasma gondii, Cryptosporidium spp.
Diagnosis, biotechnology and laboratory (true)	Ongoing diagnosis confirmation for Foodborne zoonotic parasites in animals, animal products (meat, fish) for animal health (Toxoplasma gondii), Food safety purpose (Trichinella, Toxoplasma, Toxocara, Anisakidae), by direct methods, serology (ELISA , Western Blot), molecular typing for species identification, or isolate genotyping.	Trichinella spp, Toxocara spp, Toxoplasma gondii, Cryptosporidium spp, Giardia duodenalis, Anisakidae.
Vaccines (true)	Ongoing research programs to develop vaccines against Trichinella in pigs and Toxoplasma gondii in cats	Trichinella spp, Toxoplasma gondii
Feed safety (true)	Ongoing research fot improvement of protozoan detection on food matrices such as fresh vegetables.	Toxoplasma gondii, Cryptosporidium spp, Giardia duodenalis.

TOR 3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main focus area for which you were designated

Proposal title	Scope/Content	Applicable Area
Development of tests to detect Trichinella infected animals (mainly pigs)	Improvement of reliable serological tests to detect infected pigs are needed for surveillance of indoors pigs reared in officially recognised holdings applying controlled housing conditions. Indeed, available tests are not efficient in detection of early infection or low level infection, as there is a lack of detection due to a blind window of few days. New antigenic targets needs to be defined to replace serological tests based on excretory/secretory antigens.	Laboratory Expertise

Development of methods for better detection of foodborne parasites (protozoan) on fresh vegetables.	Ongoing work to improve molecular tools for detection of Toxoplasma, Cryptosporidium and Giardia on environmental matrix such as fresh vegetable (salads).	Laboratory Expertise
---	--	----------------------

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

Yes

Research need 1

Please type the Research need: Identify markers/antigens of early Trichinella infection in pigs in order to develop relevant serological tests like "easy to use" in field or slaughterhouse.

Relevance for WOA Disease Control, Capacity Building, Other, Standard Setting, Animal Welfare, Facilitation of international collaboration,

Relevance for the Code or Manual Code, Manual,

Field Epidemiology and Surveillance, Diagnostics, Vaccines, Therapeutics,

Animal Category Terrestrial, Aquatic,

Disease:

Trichinellosis

Kind of disease (Zoonosis, Transboundary diseases) Zoonosis, 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: Terrestrial Manual Chapter 3.1.23 - Trichinellosis (infection with Trichinella spp.)

Notes:

Answer: There is need for new serological tests based on Trichinella early expressed antigens which are reliable enough to detect low infected and/or early infected pigs. Such kind of test could replace the direct method based on larvae detection in meat. This will facilitate detection of positive pigs in field (before slaughter) and help to monitor / manage pig farms in endemic areas. The current direct detection test (artificial digestion of meat) remains the gold reference, but it is tedious, costly, requires laboratory analyses based on nonautomated technical expertise and is difficult to implement reliably in emerging countries that lack robust veterinary infrastructures and quality assurance systems.

4. Did your Collaborating Centre maintain a network with other WOA Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same speciality, to coordinate scientific and technical studies?

Yes

Name of WOA CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
WOAH Collaborating Centre for Foodborne zoonotic parasites & WOA Reference Laboratory for trichinellosis	Saskatoon, Canada	América	- scientific collaborations and information exchanges; - exchange of proficiency samples (Trichinella) in interlaboratory testing; - member of the executive committee of the International Commission on Trichinellosis.
WOAH Reference Laboratory for trichinellosis & European Union Reference Laboratory for Parasites (EURLP)	Rome, Italy	Europa	- scientific expertise on Trichinella diagnosis; - member of the executive committee of the International Commission on Trichinellosis.

--

Pasteur Institute of Abidjan (Côte d'Ivoire)	Abidjan, Côte d'Ivoire	África	- scientific programmes for the development of natural therapies against cryptosporidiosis and giardiasis in animals. - scientific expertise for improving the detection of foodborne zoonotic parasites in livestock and wildlife in Africa
--	------------------------	--------	--

TOR 4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOAHC Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

No

TOR 6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAHC?

No

TOR 7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

Yes

Provision of reference materials and organisation of an international Proficiency Testing for Trichinella detection in meat, for several European countries and non-European countries.

Ongoing scientific advisory support aimed at improving laboratory performance, primarily in the detection of Trichinella in meat but also for other food-borne parasites.

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAHC, to personnel from WOAHC Members?

Yes

a) Technical visit : 0

b) Seminars : 0

c) Hands-on training courses: 2

d) Internships (>1 month) : 3

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
C	Two training sessions at the WOAHC CC for technician performing the official daily analysis on Trichinella larvae detection in meat	France	20
D	Internship for working on screening and efficiency evaluation of natural plant products against Cryptosporidium infection Scientific advice for setting up a reference centre on foodborne parasites detection in livestock in Africa	Côte d'Ivoire	1
D	Internship for genotyping and molecular characterisation of Cryptosporidium spp. and Giardia duodenalis in neonatal	Tunisie	1

	diarrhoea in ruminants in North Africa		
D	Internship for studying the role of extracellular vesicles in host-pathogen interactions during infection of skeletal striated muscle by the parasite <i>Trichinella</i>	Lebanon	1

TOR 8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOA?H

No

TOR 9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOA?H that may be useful to Members of WOA?H

a) Articles published in peer-reviewed journals:

11

- Blin M, Bornier F, Lazzarin N, Alonzi J, Polack B, Vallée I, Rognon A, Mathieu-Bégné E, Thomas M, Limonne D, Boissier J. Use of commercial serological tests to detect schistosomiasis in sheep. *Vet Parasitol.* 2025;338:110538. doi: 10.1016/j.vetpar.2025.110538.
- Boucard A.-S., Kulakauskas S., Alazzaz J., Chaouch S., Mammeri M., Millan-Oropeza A., Machado C., Henry C., Péchoux C., Richly H., Gassel M., Langella P., Polack B., Florent I., Bermúdez-Humarán L. G., s. d. Isolation of derivatives from the food-grade probiotic *Lactobacillus johnsonii* CNCM I-4884 with enhanced anti-Giardia activity. *Gut Microbes* 2025, 17 (1): 2474149, doi: 10.1080/19490976.2025.2474149
- Polack B, Thomas M, Wu-Chuang A, Abuin-Denis L, Cabezas-Cruz A, Jacouton E, Mammeri M, Florent I, Bermúdez-Humarán LG. Impact of *Lactobacillus johnsonii* CNCM I-4884 on canine giardiasis: a probiotic-based approach. *Parasite Vectors.* 2025;19(1):22. doi: 10.1186/s13071-025-07166-3.
- Devulder A., Polack B., Mammeri M., 2025. Une revue mondiale sur *Cryptosporidium* spp. chez les pigeons avec un accent sur le concept de «One Health» (Une seule santé). *Revue d'élevage et de médecine vétérinaire des pays tropicaux*, 781-13, doi: 10.19182/remvt.37637
- Rafael Calero-Bernal, Martha Betson, Iva Slana, Barbora Bartosova, Gianluca Marucci, Alessia Possenti, Gema Álvarez-García, Nadja Bier, Anne Mayer-Scholl, Rebecca Berg, Umer Chaudhry, Nadia López-Ureña, Weronika Piotrowska, Jacek Sroka, Gro Johannessen, Rebecca Davidson, Filip Dámek, Radu Blaga, Sandra Thoumire, Barbora Zalewska, Helga Waap, Pikka Jokelainen, Marco Lalle Molecular detection of *Toxoplasma gondii* in ready-to-eat salad mixes: multi-country survey using a validated and harmonised standard operating procedure, Europe, 2021 to 2022 *Eurosurveillance*, 2025, 30 (22), doi:10.2807/1560-7917.ES.2025.30.22.2400594
- Samia Bedjaoui, Djamel Baroudi, Karim Tarik Adjou, Bernard Davoust and Younes Laidoudi. Molecular and Epidemiological Investigation of *Cryptosporidium* infection in Goat Population from Bouira Province, Algeria. *Pathogens* 2025, Volume 14, Issue 6, 597.
- Troell K, Stensvold CR, Sannella AR, Betson M, Östlund E, Chalmers RM, Chaudhry U, Davidson R, Davies L, Ignatius R, de Jong A, Karadjian G, Adjou K, Klotz C, Ptochos S, Robinson G, Roelfsema J, Soba B, Sroka J, Vatta P, Wensman JJ, Cacciò SM. Design, development, and testing of a new multi-locus sequence typing scheme for the zoonotic pathogen *Cryptosporidium parvum*. *Curr Res Parasitol Vector Borne Dis.* 2025 14;8:100308. doi: 10.1016/j.crvbd.2025.100308.
- Lea Grbavac, Filip Dámek, Sandra Thoumire, Aurélien Mercier, Karine Passebosc-Faure, Nika Konstantinović, Marta Kiš, Željko Mihaljević, Tatjana Živičnjak, Radu Blaga, Delphine Le Roux. Seroprevalence and genetic characterization of *Toxoplasma gondii* in hunted wild boars (*Sus scrofa*) from Croatia. *Parasitol Res.* 2025;124(11):130. doi: 10.1007/s00436-025-08590-1.
- Robert M, Duflot M, Jédi F, Koudougou C, Durand L, Morio F, Gay M, Le Pape P, Lavergne RA. Hyperinfection with *Anisakis simplex sensu stricto*: observations from a cluster of two cases in France. *Food Waterborne Parasitol.* 2025 Aug 29; 40:e00282. doi: 10.1016
- Duflot M, Pozet F, Le Bouquin S, Richomme C, Bourgau O, Blasco-Costa I, Gay M. Distribution of *Clinostomum complanatum* in two commercially important freshwater fish, perch and rudd, in France. *Food Waterborne Parasitol.* 2025;40:e00281. doi: 10.1016
- Sabadel A, Gay M, Lane HS, Bourgau O, Bury SJ, Delgado J, Duflot M. Just Hitching a Ride: Stable Isotopes Reveal Non-Feeding Behaviour of *Anisakis simplex* Within Its Host Fish. *J Fish Dis.* 2025;48(2):e14043. doi: 10.1111/jfd.14043

b) International conferences:

10

- K. T. Adjou, A. Chevillot, E. Carvin, P. Lucas, Y. Blanchard, H. Louifi, R. Arab, M. Mammeri, M. Thomas, B. Polack, G. Karadjian, D. Costa, L. Favennec et N. Dheilly. First identification of *Cryptosporidium parvum* virus 1 (CSpV1) in various subtypes of *Cryptosporidium parvum* from humans and diarrheic calves, lambs and goat kids in France. 8th IGCC, 23-26 February 2025. Melbourne, Australia.
- Helga Waap, Marieke Opsteegh, Madalena Vieira-Pinto, Anne Sofie Vedsted Hammer, Annelise Mader, Arno Swart, Catharina Ludolphy, Clare Hamilton, Famke Jansen, Filip Dámek, Isaia Symeonidou, Ivan Ludoški, Ivan Pavlovic, Jan Paeshuyse, Luca Villa, Mirek Rozycki, Pikka Jokelainen, Radu Blaga, Robert Glogowski, Valentina Caliendo, Gunita Deksne Systematic review of zoonotic parasites in game in Europe. 1st Safe Game Meat Conference, 26-28 May 2025, Porto, Portugal.
- Radu Blaga, Delphine Le Roux, Sandra Thoumire, Vitomir Djokic, Filip Dámek, Julie Rouzet. *Toxoplasma gondii* detection in food products from a One Health perspective. Smart Diaspora 2025, UEFSCDI, Nov 2025, Cluj-Napoca, Romania.
- DUFLOT, M., BOURGAU, O., THÉBAULT, A. & GAY, M. 2025a. Anisakidae infestation levels of seven fish species collected at the retail stage in France: Comparison of the 2017 and 2022 monitoring plans. International Symposium of Fish Parasites XI "Fish Health, Parasites and Biodiversity Conservation". Merida Yucatan (MEX), Mexico.
- DUFLOT, M., CAPPELLETTI, A., BOURGAU, O., COUVREUR, C., CORDIER, R., GAY, M. & CRESSON, P. 2025b. Anisakidae in the English Channel and the North Sea: Review of the literature, gap identification and preliminary data. International Symposium of Fish Parasites XI "Fish Health, Parasites and Biodiversity Conservation". Merida Yucatan

(MEX), Mexico.

6. DUFLOT, M., CRESSON, P., BOURGAU, O. & GAY, M. 2025c. The ecology of black spot syndrome induced by *Cryptocotyle (Digenea)* infestations in the ecosystems of the English Channel and the North Sea. *International Symposium of Fish Parasites XI "Fish Health, Parasites and Biodiversity Conservation"*. Merida Yucatan (MEX), Mexico.
7. DUFLOT, M., POZET, F., LE BOUQUIN, S., RICHOMME, C., BOURGAU, O., BLASCO-COSTA, I. & GAY, M. 2025d. Emergence or under reported zoonotic parasite *Clinostomum complanatum*? *International Symposium of Fish Parasites XI "Fish Health, Parasites and Biodiversity Conservation"*. Merida Yucatan (MEX), Mexico.
8. MATTIUCCI, S. & GAY, M. 2025. Sharing research work between France and Italy, on Fish Parasites of zoonotic importance: from tool development to epidemiological studies. *Joint meeting between the French and Italian Societies of Parasitology. Online Conference, France.*
9. SABADEL, A., J M, GAY, M., LANE, H., S., BOURGAU, O., BURY, S., J, DELGADO, J. & DUFLOT, M. 2025a. Just Hitching a Ride: Stable isotopes reveal non-feeding behaviour of *Anisakis simplex* within its host. *Fish Aotearoa Aquatic Diseases Symposium (AADS-2). Dunedin, New Zealand.*
10. SABADEL, A., J M, GAY, M., LANE, H., S., BOURGAU, O., BURY, S., J, DELGADO, J. & DUFLOT, M. 2025b. Just Hitching a Ride: Stable isotopes reveal non-feeding behaviour of *Anisakis simplex* within its host. *Joint European Stable Isotope Users Meeting (JESIUM). Groningen, The Netherlands.*

c) National conferences:

9

1. Bruno Polack, Isabelle Vallée. *Les parasites des viandes : état des connaissances en France. Congrès conjoint des Sociétés Françaises de Parasitologie et de Mycologie Médicale, Jun 2025, Amiens, France.*
2. Mohamed Mammeri, Bruno Polack. *Différencier Giardiose et trichomonose et les traiter. Symposium LOOF & santé, LOOF, Jun 2025, Maisons-Alfort, France.*
3. Anais Devulder, Bruno Polack, Mohamed Mammeri. *Cryptosporidium et Giardia chez les pigeons : un risque sous-estimé pour la santé publique ? Congrès conjoint des sociétés françaises de parasitologie et de mycologie médicale, Jun 2025, Amiens, France.*
4. Sandra Thoumire, Willy Dabin, Fabien Demaret, Ombeline Girard, Madeleine Lausted, Anca Varna dos Santos, Isabelle Villena, Delphine Le Roux, Karine Passebosco-Faure, Aurélien Mercier, Radu Blaga. *Etude de prévalence de T. gondii chez les mammifères marins en France et génotypage. Congrès conjoint des sociétés françaises de parasitologie et mycologie médicale, 18-20 Juin 2025, Amiens, France.*
5. Julie Rouzet, Marine Le Dudal, Helene Huet, Sandra Thoumire, Radu Blaga, Delphine Le Roux. *Les explants intestinaux félines : modèle d'étude des interactions de Toxoplasma gondii avec la réponse immunitaire de la muqueuse de son hôte définitif. Congrès conjoint des sociétés françaises de parasitologie et mycologie médicale, 18-20 Juin 2025, Amiens, France.*
6. CRESSON, P., DUFLOT, M., BOURGAU, O., CAPPELLETTI, A., COUVREUR, C., CORDIER, R. & GAY, M. 2025a. *Habitat et taux de lipides, deux éléments clés pour expliquer l'infestation des poissons par les parasites Anisakidés en Manche et mer du Nord. Congrès annuel de la Société Française de Parasitologie. Amiens, France.*
7. CRESSON, P., DUFLOT, M., BOURGAU, O., CAPPELLETTI, A., COUVREUR, C., CORDIER, R. & GAY, M. 2025b. *Vers une approche plurispécifique de l'infestation des poissons par les parasites anisakidés en Manche et en mer du Nord. 9e Rencontres de l'Ichtyologie en France. Paris, France.*
8. DELHOMME, A., GAY, M., DELEGRANGE, A., BOURGAU, O., DUFLOT, M. & CRESSON, P. 2025. *Plongée dans le zooplancton de la mer du Nord : développement d'une méthode de détection des Anisakidae et évaluation des niveaux d'infestation dans les Euphausiacea. Congrès annuel de la Société Française de Parasitologie. Amiens, France.*
9. SABADEL, A., J M, GAY, M., LANE, H., S., BOURGAU, O., BURY, S., J, DELGADO, J. & DUFLOT, M. 2025c. *Unlocking Anisakis feeding strategies through stable Isotope analyses. Congrès annuel de la Société Française de Parasitologie. Amiens, France.*

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

11. What have you done in the past year to advance your area of focus, e.g. updated technology?

Ongoing research programs for improving foodborne zoonotic parasite detection tools or control methods such as new therapies based on natural products, vaccination, new approaches through the use of new-end technologies. PhD students are involved in these projects which contribute to the training of future researchers in the field of animal health and the control of foodborne parasites.

12. Additional comments regarding your report: