

Final report PT-04: An 1/2024

PT-04: “Detection of Anisakidae L3 larvae in fish fillets”

Design

Purpose	Evaluation of laboratories competence in detection anisakidae larvae in fish fillet	
Scheme type	Single, simultaneous	
Participants	National reference laboratories for parasites. Public and private laboratories	
N. of participants	Depending on request	
Method	<ul style="list-style-type: none"> • ISO 23036-1:2021 Microbiology of the food chain — Methods for the detection of Anisakidae L3 larvae in fish and fishery products — Part 1: UV-press method. • ISO 23036-2:2021 - Microbiology of the food chain — Methods for the detection of Anisakidae L3 larvae in fish and fishery products — Part 2: Artificial digestion method. • EC Regulation No 2074/2005 (Candling) 	
Test method	chosen by the participant	
PT items	Matrix	fresh water farmed fish fillet
	Item	Anisakidae live larvae
	N. of samples	3 for each participant
	Distribution	Immediate shipment after preparation
Subcontracted activities	NA	
Results evaluation	Qualitative	

Implementation

N. of participants	29	PT items	fish fillet sandwiches	105
Public laboratories	/			

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Private laboratories	/	PT panel composition	3 fish fillet sandwiches each spiked with 1 larva;
NRL	29	Shipping	DHL
Shipping dates	11/03/2024		

Results

The PT final evaluation was qualitative only. The PT was considered passed if all positive and all negative samples were correctly identified by the participant.

Laboratory code	N° of samples correctly identified	N° of samples NOT correctly identified	Method applied	Final evaluation
AF01	3	0	Artificial digestion	POSITIVE
AF02	2	1	Artificial digestion	NEGATIVE
AF03	3	0	UV examination after freezing (UV-Press)	POSITIVE
AF04	3	0	Artificial digestion	POSITIVE
AF05	3	0	Artificial digestion	POSITIVE
AF06	3	0	UV examination after freezing (UV-Press)	POSITIVE
AF07	3	0	Artificial digestion	POSITIVE
AF08	3	0	Candling; Artificial digestion	POSITIVE
AF09	3	0	UV examination after freezing (UV-Press)	POSITIVE
AF10	3	0	Artificial digestion	POSITIVE
AF11	3	0	Artificial digestion	POSITIVE
AF12	2	1	Artificial digestion	NEGATIVE
AF13	3	0	UV examination after freezing (UV-Press)	POSITIVE
AF14	3	0	Artificial digestion	POSITIVE
AF15	2	1	Artificial digestion	NEGATIVE
AF16	3	0	Artificial digestion	POSITIVE
AF17	2	1	Artificial digestion	NEGATIVE
AF18	2	1	Candling; Artificial digestion	NEGATIVE
AF19	3	0	UV examination after freezing (UV-Press)	POSITIVE
AF20	3	0	Artificial digestion	POSITIVE
AF21	3	0	Artificial digestion	POSITIVE
AF22	3	0	Artificial digestion	POSITIVE
AF23	2	1	Candling; Artificial digestion	NEGATIVE
AF24	3	0	Artificial digestion	POSITIVE
AF25	3	0	Artificial digestion	POSITIVE
AF26	2	1	Artificial digestion	NEGATIVE
AF27	3	0	Artificial digestion	POSITIVE
AF28	3	0	Artificial digestion	POSITIVE
AF29	3	0	Candling; Compressorium; Artificial digestion	POSITIVE

Legend: Laboratories that failed the PT are grey boxed and marked in bold.

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Summary of results:

Total number of PT panels	35
Number of participant laboratories	29
Number of participants that passed the PT	22
Number of participants that failed the PT	7

Overtime comparison of results

Laboratory code	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AF01	P	P	P	P	P	P		P	P	P	P
AF02	P	P	P	N	P	P	P	P	P	P	N
AF03	P	P	P	P	P	P	P	P	P	P	P
AF04	P	P	P	P	P	P	N	P	P	P	P
AF05	P		P	P	P	P	P	P	N	P	P
AF06			P		P	P	P	P	P	P	P
AF07											P
AF08	P	P	P	P	P	P	P	P	P	P	P
AF09						P		P	P	P	P
AF10	P	P	P	P	P	P	P	P	P	P	P
AF11	P	P	P	P	P	P	N	P	P	P	P
AF12	N	P	P	N	P	P	P	P	P		N
AF13	P	P	P	N	P	P	P	P	P	P	P
AF14					P	N	P	P	N	P	P
AF15	P	N	P	P	P	P	P	P	P	N	N
AF16	N	P	P	P	P	P		P	N	P	P
AF17									P	P	N
AF18	P	P	N	P	P	P	P	P	P	P	N
AF19	N	P	P	N	P	P	P	P	P	P	P
AF20	P	P	N	N					P	P	P
AF21	P	P	P	P	P	N	P	P	P	P	P
AF22				P	P	P	P	P	P	P	P
AF23	P	P	P	P	P	P	P	P	P	P	N
AF24	P	P	P	P	P	P	P	P	P	P	P
AF25	P		P	N	P		P	P	P	P	P
AF26	P	P	P	P	P	P	N	P	P	P	N
AF27		P	P	P	P	P		N	P	P	P
AF28					P			N	N	P	P
AF29		P	P	P	P	P	N	P	P	P	P

Legend: P, positive result; black boxed N, negative result; empty gray boxed, not attending/not sending result

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Comments:

For the PT round 2024, 76% of the laboratories (22/29) passed the PT. Seven laboratories failed the PT reporting each one false negative (0 instead of 1) and all applied artificial digestion method. No explanation was provided by any of the participant for the PT failure and low performance. It can be hypothesized that limited experience of new analyst(s) could be the reason of poor performance since failure was observed in laboratories that usually performed well in previous years. However, we cannot exclude that problems occurred during analysis.

In PT 2024 round, the overall number of participant laboratories appears to have reached a plateau when compared with the last four years (Figure 1) and it is currently limited to NRLs. However, a remarkable decrease in the overall performance of the laboratories was observed, particularly in comparison to the previous year (2023). Indeed, the percentage of failing laboratories was 4% in 2023 vs 24% in 2024. Nevertheless, a trend with a periodic fluctuation in failure percentage can be observed overtime and it might reflecting turnover of technical personnel in each laboratory. Indeed, poor performance (failure) could not be related to irregular or first time participation to the PT. Lack of experience of technical personnel (either new or not familiar with the test methods) could mainly explain negative results. It is anyway to be remarked that several laboratories did not provide a correct information regarding the method applied. In particular, in the Result Form submitted, the reference to the method applied for the artificial digestion (AD) was not correctly reported (EURLP method) by 20 out of 29 participants. Indeed, for AD the only allowed procedure is the ISO 23036-2:2021 or, eventually, an internal procedure of the laboratory but in compliance with the ISO 23036-2:2021. Similarly, 2 out to 29 laboratories reported incomplete reference to the UV-press-method (UV). This prevented the PT provider to express any further comment on the correct or incorrect application of the procedure

Also the relative percentage of detection methods adopted did not change substantially in comparison with previous years (Figure 2) with AD, with or without the preliminary analysis by candling (C), still being the prevalent method applied (24 laboratories, 83%), largely because it does not require special equipment. UV-press method (UV) was used in five laboratories (17%).

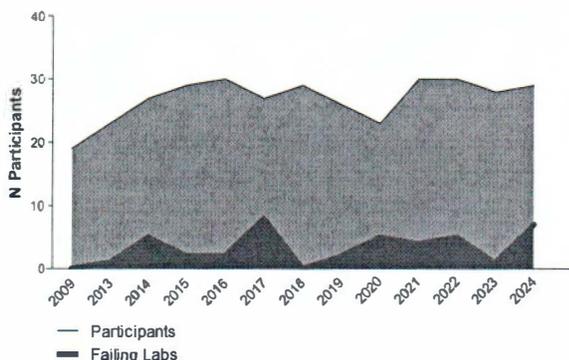


Figure 1. PT04 trend overtime

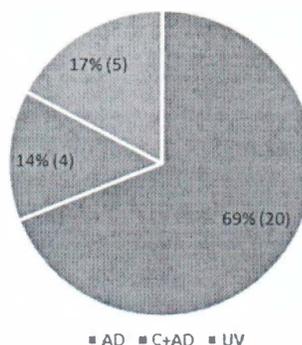


Figure 2. Percentage of the detection methods applied

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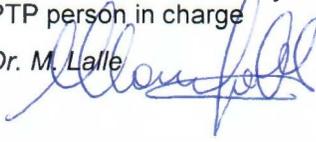
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Written and elaborated by
PTP person in charge

Dr. M. Lalle



Date 22/05/2024

Verified and issued by
The Director

Dr. A. Casulli



Notes:

1. To guarantee confidentiality, participant laboratories are identified by alphanumeric codes. PT participant identity is kept confidential and bound by professional secrecy. The PTP reserves itself the right to provide the laboratory PT result to the competent authority on request.
2. The organizer designates a qualified company for the transport and delivery of PT items.
3. Each participating laboratory receives a PT panel according to the PT scheme. Each PT item consists of a fish fillet sandwich spiked or not with live Anisakidae larvae. The homogeneity of PT items is ensured by an accurate control of the number of larvae spiked into each sample (item) made by two operators. PT items are stable for 7 days from the date of preparation (corresponding to the shipping date), provided that they are maintained in suitable conditions.
4. At the beginning of each year, the organizer draws up a PT program and makes it known by sending an email to the NRLs
5. The final report issue of each PT round shows the PT program implementation.

End of the report

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