

Final report PT-An 1/2020

PT report on “Detection of Anisakidae L3 larvae in fish fillets”

Design

Purpose	Evaluation of laboratories in charge for official control on food	
Scheme type	Single	
Participants	Public and private, European laboratories	
N. of participants	Depending on request	
Method	not regulated	
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	23	PT items	fish fillet sandwiches	78
Public laboratories	-		PT panel composition	3 fish fillet sandwiches: one spiked with 0 larvae, two spiked with 1 larva.
Private laboratories	-		Shipping	TNT Express
NRL	23			
Shipping dates	09/03/2020			

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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	Final evaluation
A1	2	1	Negative
A2	3	0	Positive
A6	3	0	Positive
A7	3	0	Positive
A9	3	0	Positive
A10	3	0	Positive
A11	2	1	Negative
A12	3	0	Positive
A13	3	0	Positive
A15	3	0	Positive
A16	3	0	Positive
A17	3	0	Positive
A18	2	1	Negative
A19	3	1	Positive
A20	2	1	Negative
A21	3	0	Positive
A25	3	0	Positive
A26	3	0	Positive
A28	3	0	Positive
A29	3	0	Positive
A30	2	1	Negative
A35	3	0	Positive
A36	3	0	Positive

Legend:

- Laboratories that failed the PT are marked in bold.

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Summary of results:

Total number of PT panels	23
Number of participant laboratories	23
Number of participants that passed the PT	18
Number of participants that failed the PT	5

Overtime comparison of results

Laboratory code	2014	2015	2016	2017	2018	2019	2020
A1	P	P	P	P	P	P	N
A2	P	P	P	N	P	P	P
A3	N	P	P	P	P	P	
A5	P	P	P	P	P	P	
A6	P	P	P	P	P	P	P
A7	P	P	P	P	P	P	P
A8	P	P	P		P		
A9	P		P	N	P		P
A10	P	P	N	P	P	P	P
A11	P	N	P	N	P	P	N
A12	P	N	P	P	P	P	P
A13	P	P	P	N	P	P	P
A15	P	P	P	P	P	P	P
A16	N	P	P	N	P	P	P
A17	NR		P	P	P	P	P
A18	P	P	P	P	P	P	N
A19	P	P	P	P	P	N	P
A20	P	P	P	P	P	P	N
A21	P	P	P	P	P	P	P
A23/A33/A25*	N	P	P	N	P	P	P
A25	P	P	P	N			
A26	P	P	P	P	P	P	P
A28	P		P	P	P	P	P
A29			P		P	P	P
A30		P	P	P	P	P	N
A31		P	P	P	P	P	
A35					P	N	P
A36				P	P	P	P
A37					N		
A38					P		
A39						P	

Note: *Lab code A25 re assigned in 2018 and 2019; P, positive; N, negative; NR, no result received; gray boxed, no participation

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Comments:

This PT round resulted in 78% of the laboratories (18/23) that passed the PT. Five laboratories failed the PT all reporting false negative likely due to new unexperienced analysts or troubleshoots with the detection procedure (all applied artificial digestion). Noteworthy, two laboratories overestimated the number of spiked larvae in one sample, reporting two larvae instead of one. Since the PT is only qualitative, presence/absence of the larvae, the PT results were considered positive but the laboratories were invited to take into consideration the over-overestimation and take appropriate actions including further training of the analyst on morphological identification of the larvae. Two laboratories reported fragmentation of the larvae. Also in these cases artificial digestion was used as detection procedure and likely over-digestion or accidental breaking of the larvae during the sample manipulation (e.g. sample mincing) could explain the discrepancy. No further corrective action was required. Due to restriction applied following the novel Coronavirus emergence EURLP was not able to organize any EQA scheme for laboratories that failed the PT before the the writing of this Final Report.

This PT round highlighted a significant decrease in the performance of the participant laboratories; this outcome likely is the consequence of: i) spiking of fish fillets with a low number of larvae; ii) inexperience of new technical personnel in some of the labs; ii) troubleshoots in the test procedure.

Over the last years, the number of PT participants decreasing in comparison to the previous years (26 in 2019; 28 in 2018, 27 in 2017 and 30 in 2016) as well as the relative percentage of detection methods adopted (Figure 1). Artificial digestion is still the prevalent method applied (19 Laboratories), largely because it does not require any special equipment. UV-press method, alone or in combination with digestion, was used in six laboratories. Candling was used exclusively combined with artificial digestion and/or UV-press method.





 Candling	2
 Compressorium	0
 UV examination after freezing ...	6
 Artificial digestion	19



Figure 1. Summary of the detection methods applied

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The Director
Dr. S.M. Cacciò

Date 27/03/2020

Notes:

1. To guarantee confidentiality, participant laboratories are identified by alphanumeric codes. PT participant identity is kept confidential and bound by professional secrecy. If PT results have to be provided directly to a competent authority, the organizer shall send a written notice to inform the involved participants.
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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