Final report PT-Tm 1/2020

PT "Identification of *Trichinella* larvae at the species level by a molecular method"

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	not applicable
	Item	*Trichinella* spp. larvae in 96% ethanol
	N. of samples	4 vials (10 larvae/each)
	Distribution	Preparation and packaging can be performed before shipment
Subcontracted activities	NA	
Results evaluation	Qualitative	

Implementation

N. of participants	19	PT items	PT panel 4 vials	10 larvae for each of the following species: *T. spiralis, T. nativa, T. britovi,* and *T. pseudospiralis*
Public laboratories	-			
Private laboratories	-		PT panel 12 vials	-
NRLs	19		Shipping	DHL

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Shipping dates	March 9, 2020

Qualitative results

The PT final evaluation was qualitative only. The PT was considered passed if all isolates or, in case of single larvae at least one of them for each isolate, were correctly identified.

Laboratory code	N. right identification	N. wrong identification	N. missed identification	Final evaluation
NRL50	4	0	0	positive
NRL51	4	0	0	positive
NRL55	4	0	0	positive
NRL56	4	0	0	positive
NRL57	4	0	0	positive
NRL59	4	0	0	positive
NRL61	4	0	0	positive
NRL65	4	0	0	positive
NRL66	4	0	0	positive
NRL67	4	0	0	positive
NRL69	4	0	0	positive
NRL70	4	0	0	positive
NRL71	4	0	0	positive
NRL72	4	0	0	positive
NRL73	4	0	0	positive
NRL74	4	0	0	positive
NRL77	4	0	0	positive
NRL78	3	0	1	negative
NRL82	4	0	0	positive

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Summary of qualitative results:

Number of participant laboratories	19
Number of participants that passed the PT	18
Number of participants that failed the PT	1

Overtime comparison of results (last 5 years)

Laboratory code	2016	2017	2018	2019	2020
NRL50	negative	negative	positive	positive	positive
NRL51	-	positive	positive	positive	positive
NRL52	positive	negative	positive	negative	-
NRL53	positive	-	-	-	-
NRL55	positive	positive	positive	positive	positive
NRL56	positive	positive	positive	positive	positive
NRL57	positive	positive	positive	positive	positive
NRL59	positive	positive	positive	positive	positive
NRL61	positive	positive	positive	positive	positive
NRL62	-	-	-	positive	-
NRL63	negative	negative	negative	negative	-
NRL65	positive	negative	positive	positive	positive
NRL66	negative	positive	positive	positive	positive
NRL67	-	positive	-	positive	positive
NRL69	-	-	negative	positive	positive
NRL70	negative	positive	positive	positive	positive
NRL71	positive	positive	negative	positive	positive
NRL72	positive	positive	positive	positive	positive
NRL73	positive	positive	positive	positive	positive
NRL74	negative	positive	positive	positive	positive
NRL77	negative	positive	positive	positive	positive
NRL78	-	positive	positive	negative	negative
NRL80	-	negative	-	-	-
NRL82	positive	-	negative	positive	positive
NRL83	-	-	-	positive	-

Comments:

The most part of laboratories used the multiplex PCR method to identify larvae at species level (Figure1). DNA purification was done mainly by commercial kits based on magnetic beads or silica gel, only few participants used the original purification protocol based on Tris-HCl and pK (Figure 2). All but one laboratories were able

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to successfully identify the four *Trichinella* species, the participant that failed reported technical problems during the analysis due to samples deterioration for inappropriate storage during the Covid-19 lockdown.

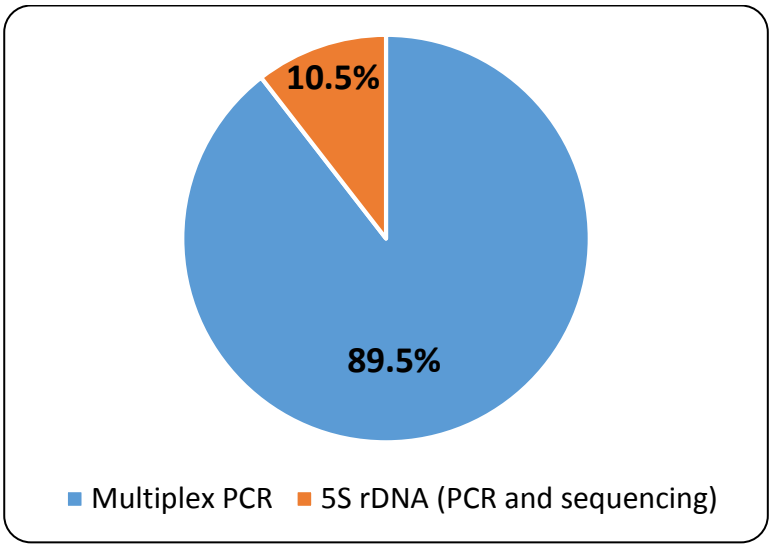

Figure 1. Detection methods used for larvae identification at species level.

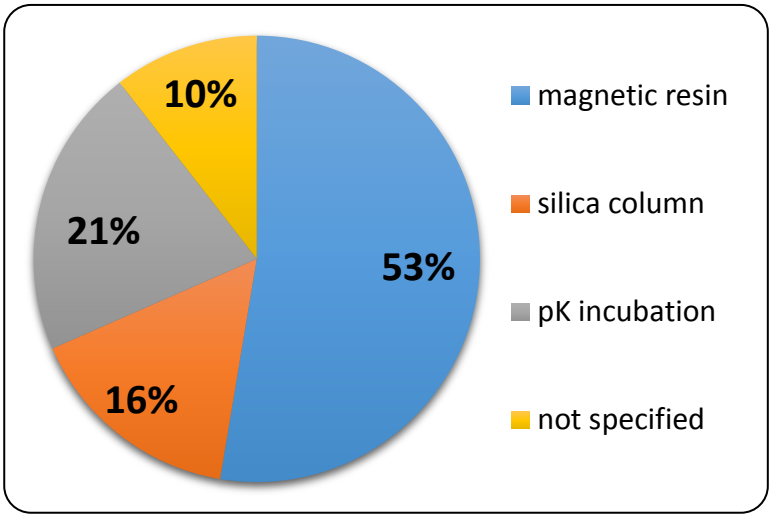

Figure 2. Detection methods used for larvae identification at species level.

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The Director
Dr. S.M. Cacciò

Date November 5, 2020

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 4 or 12 1.5 ml vials containing four different *Trichinella spp*. The homogeneity of PT items is ensured by an accurate control of the number of larvae spiked into each vial (item), made by two operators using a stereo microscope. PT items are stable for 5 years 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 issued for each PT round shows the PT program implementation.

End of the report

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