

EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION
ORGANISATION EUROPÉENNE ET MEDITERRANÉENNE POUR LA PROTECTION DES PLANTES
Summary sheet of validation data for a diagnostic test

The EPPO Standard PM 7/98 *Specific requirements for laboratories preparing accreditation for a plant pest diagnostic activity* describes how validation should be conducted. It also includes definitions of performance criteria.

Laboratory contact details	Council for Agricultural Research and Economics-Research Centre for Plant Protection and Certification Via Carlo Giuseppe Bertero, 22, 00156 Rome, Italy
Short description of the test	detection of <i>Xanthomonas hortorum</i> pv. <i>gardneri</i> , <i>Xanthomonas euvesicatoria</i> pv. <i>perforans</i> , <i>Xanthomonas vesicatoria</i> , <i>Xanthomonas euvesicatoria</i> pv. <i>euvesicatoria</i> <i>Xanthomonas euvesicatoria</i> pv. <i>euvesicatoria</i> by Molecular real time RT PCR in Seeds
Date, reference of the validation report	2022-02-10 - Validation_ASPOPI_2017_pp143-166
Link to other validation data	- Validation_ASPOPI_2017_pp143-166 detection of <i>Xanthomonas euvesicatoria</i> pv. <i>euvesicatoria</i> , <i>Xanthomonas hortorum</i> pv. <i>gardneri</i> , <i>Xanthomonas euvesicatoria</i> pv. <i>perforans</i> , <i>Xanthomonas vesicatoria</i> <i>Xanthomonas vesicatoria</i> by Molecular Conventional PCR in Seeds
Validation process according to EPPO Standard PM7/98?	yes
Is the lab accredited for this test?	no
Was the validated data generated in the framework of a project?	Other_project
If yes, please specify	ASPROPI (Founded by MIPAAF_Italy)
Description of the test	
Organism(s)	<i>Xanthomonas hortorum</i> pv. <i>gardneri</i> (XANTGA) <i>Xanthomonas euvesicatoria</i> pv. <i>perforans</i> (XANTPF) <i>Xanthomonas vesicatoria</i> (XANTVE) <i>Xanthomonas euvesicatoria</i> pv. <i>euvesicatoria</i> (XANTEU)
Detection / identification	detection
Method(s)	Molecular real time RT PCR
Method: Molecular real time RT PCR	
Reference of the test description	
New test being considered for inclusion in the next version of the EPPO diagnostic protocol?	yes
Kit	

Is a kit used	no
Other information	
Reaction type	Multiplex (>3)
Other details on the test	Quadruplex real-time PCR
Performance Criteria :	
Organism 1.:	Xanthomonas hortorum pv. gardneri(XANTGA)
Organism 2.:	Xanthomonas euvesicatoria pv. perforans(XANTPF)
Organism 3.:	Xanthomonas vesicatoria(XANTVE)
Organism 4.:	Xanthomonas euvesicatoria pv. euvesicatoria(XANTEU)
Analytical sensitivity	
What is smallest amount of target that can be detected reliably?	10 ⁴ cfu/mL (evaluated on tomato seed extracts spiked with bacterial suspensions at known concentration) 100 fg/ul (evaluated on bacterial DNA)
Diagnostic sensitivity	
Proportion of infected/infested samples tested positive compared to results from the standard test, see appendix 2 of PM 7/98	92%
Standard test(s)	Comparison of samples with known status
Analytical specificity - exclusivity	
Number of non-target organisms tested	Among 30 non-target strains false positive occurred on: CREA-DC 1032 Xanthomonas campestris pv. campestris, CREA-DC 1033 Xanthomonas hortorum pv. pelargonii, CREA-DC 1264 Xanthomonas citri pv. citri, NCPPB 1832 Xanthomonas arboricola pv. populi, NCPPB 1946 Xanthomonas campestris pv. raphani, CREA-DC 1495 unknown saprophyte strain from tomato seeds, LMG849 Xanthomonas axonopodis pv. poinsettiae.
Specificity value	76,6%
Diagnostic Specificity	
Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test	73%
Specify the test(s)	Comparison of samples with known status
Reproducibility	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	72%
Repeatability	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	75%

Test performance study	
Test performance study?	yes
Brief details of the test performance study and its output. If available, link to published article/report	Test performance study organized in the frame of a National Project (ASPROPI) involving seven Italian laboratories
The following complementary files are available online:	<ul style="list-style-type: none"> • <u>VALIDATION_Xanthomonas_spp_AS PROPI_2017</u>

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