

**EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION**  
**ORGANISATION EUROPEENNE ET MEDITERRANEENNE 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.

<b>Laboratory contact details</b>	Council for Agricultural Research and Economics– Research Centre for Plant Protection and Certification Via Carlo Giuseppe Bertero, 22, 00156 Rome, Italy
<b>Short description of the test</b>	detection of <i>Xanthomonas hortorum</i> pv. <i>gardneri</i> , <i>Xanthomonas euvesicatoria</i> pv. <i>perforans</i> , <i>Xanthomonas vesicatoria</i> , <i>Xanthomonas</i> <i>euvesicatoria</i> pv. <i>euvesicatoria</i> <i>Xanthomonas</i> <i>euvesicatoria</i> pv. <i>euvesicatoria</i> by Molecular real time RT PCR in Seeds
<b>Date, reference of the validation report</b>	2022-02-10 - Validation_ASPROPI_2017_pp143-166
<b>Link to other validation data</b>	- Validation_ASPROPI_2017_pp143-166 detection of <i>Xanthomonas euvesicatoria</i> pv. <i>euvesicatoria</i> , <i>Xanthomonas hortorum</i> pv. <i>gardneri</i> , <i>Xanthomonas</i> <i>euvesicatoria</i> pv. <i>perforans</i> , <i>Xanthomonas</i> <i>vesicatoria</i> <i>Xanthomonas vesicatoria</i> by Molecular Conventional PCR in Seeds
<b>Validation process according to EPPO Standard PM7/98?</b>	yes
<b>Is the lab accredited for this test?</b>	no
<b>Was the validated data generated in the framework of a project?</b>	Other_project
<b>If yes, please specify</b>	ASPROPI (Founded by MIPAAF_Italy)
<b>Description of the test</b>	
<b>Organism(s)</b>	<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)
<b>Detection / identification</b>	detection
<b>Method(s)</b>	Molecular real time RT PCR
<b>Method: Molecular real time RT PCR</b>	
<b>Reference of the test description</b>	
<b>New test being considered for inclusion in the next version of the EPPO diagnostic protocol?</b>	yes
<b>Kit</b>	

Is a kit used	no
<b>Other information</b>	
Reaction type	Multiplex (>3)
Other details on the test	Quadruplex real-time PCR
<b>Performance Criteria :</b>	
Organism 1.:	<b>Xanthomonas hortorum pv. gardneri(XANTGA)</b>
Organism 2.:	<b>Xanthomonas euvesicatoria pv. perforans(XANTPF)</b>
Organism 3.:	<b>Xanthomonas vesicatoria(XANTVE)</b>
Organism 4.:	<b>Xanthomonas euvesicatoria pv. euvesicatoria(XANTEU)</b>
<b>Analytical sensitivity</b>	
What is smallest amount of target that can be detected reliably?	10 <sup>4</sup> cfu/mL (evaluated on tomato seed extracts spiked with bacterial suspensions at known concentration) 100 fg/ul (evaluated on bacterial DNA)
<b>Diagnostic sensitivity</b>	
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
<b>Analytical specificity - exclusivity</b>	
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. poinsetticola.
Specificity value	76,6%
<b>Diagnostic Specificity</b>	
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
<b>Reproducibility</b>	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	72%
<b>Repeatability</b>	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	75%

<b>Test performance study</b>	
<b>Test performance study?</b>	yes
<b>Brief details of the test performance study and its output. It available, link to published article/report</b>	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"> <li>• <a href="#">VALIDATION_Xanthomonas_spp_ASPROPI_2017</a></li> </ul>

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