

**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>	Naktuinbouw Sotaweg 22, 2371 GD Roelofarendsveen, Netherlands
<b>Short description of the test</b>	Isolation of <i>Xanthomonas</i> sp. from tomato and pepper seeds
<b>Date, reference of the validation report</b>	2012-01-26 - Validation report for the isolation of <i>Xanthomonas</i> sp. from tomato and pepper seeds, Naktuinbouw, 2012
<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>	
<b>Description of the test</b>	
<b>Organism(s)</b>	<i>Xanthomonas vesicatoria</i> (XANTVE) <i>Xanthomonas euvesicatoria</i> pv. <i>euvesicatoria</i> (XANTEU) <i>Xanthomonas euvesicatoria</i> pv. <i>perforans</i> (XANTPF) <i>Xanthomonas hortorum</i> pv. <i>gardneri</i> (XANTGA)
<b>Detection / identification</b>	detection
<b>Method(s)</b>	Isolation Isolation (2)
<b>Method: Isolation</b>	
<b>Reference of the test description</b>	
<b>As or adapted from an EPPO diagnostic protocol</b>	yes
<b>New test being considered for inclusion in the next version of the EPPO diagnostic protocol?</b>	no
<b>EPPO Diagnostic Protocol name</b>	PM 7/110 <i>Xanthomonas</i> spp. ( <i>Xanthomonas euvesicatoria</i> , <i>Xanthomonas gardneri</i> , <i>Xanthomonas perforans</i> , <i>Xanthomonas vesicatoria</i> ) causing bacterial spot of tomato and sweet pepper (version 1)
<b>Name of the test</b>	Isolation from seed on mTMB
<b>As or adapted from an IPPC diagnostic protocol</b>	no

<b>Is the test modified compared to the reference test</b>	yes This is a modification of the current EPPO DP, NSCCA medium was used.
<b>Other information</b>	
<b>Other details on the test</b>	McGuire, R.G., Jones, J.B., Sasser, M. (1986). Tween media for Semiselective Isolation of <i>Xanthomonas campestris</i> pv. <i>vesicatoria</i> from soil and plant material. <i>Plant Disease</i> 70, 887-891. S
<b>Method: Isolation (2)</b>	
<b>Reference of the test description</b>	
<b>As or adapted from an EPPO diagnostic protocol</b>	yes
<b>New test being considered for inclusion in the next version of the EPPO diagnostic protocol?</b>	no
<b>EPPO Diagnostic Protocol name</b>	PM 7/110 <i>Xanthomonas</i> spp. ( <i>Xanthomonas euvesicatoria</i> , <i>Xanthomonas gardneri</i> , <i>Xanthomonas perforans</i> , <i>Xanthomonas vesicatoria</i> ) causing bacterial spot of tomato and sweet pepper (version 1)
<b>Name of the test</b>	Isolation from seed on mMXV
<b>As or adapted from an IPPC diagnostic protocol</b>	no
<b>Is the test modified compared to the reference test</b>	yes This is a modification of the current EPPO DP, NSCCA medium was used.
<b>Other information</b>	
<b>Other details on the test</b>	Sijam, K., Chang, C.J., Gitaitis, R.D. (1991). An agar medium for the isolation and identification of <i>Xanthomonas campestris</i> pv. <i>vesicatoria</i> from seed. <i>Phytopathology</i> 81, 831-834.
<b>Performance Criteria :</b>	
<b>Organism 1.:</b>	<b><i>Xanthomonas vesicatoria</i>(XANTVE)</b>
<b>Analytical sensitivity</b>	
<b>What is smallest amount of target that can be detected reliably?</b>	24 CFU/ml
<b>Analytical specificity - inclusivity</b>	
<b>Number of strains/populations of target organisms tested</b>	14 <i>X. euvesicatoria</i> , two <i>X. gardneri</i> , six <i>X. perforans</i> and six <i>X. vesicatoria</i> isolates were selected for determination of analytical specificity of the dilution plating on the semi-selective media mMXV and mTMB.
<b>Specificity value</b>	Analytical specificity was good. The method was able to detect all tested isolates of the XCV species complex.
<b>Analytical specificity - exclusivity</b>	
<b>Number of non-target organisms tested</b>	three isolates of <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> and one isolate of <i>Pseudomonas syringae</i> pv. <i>tomato</i>

<b>Specificity value</b>	no cross reaction The other tested seed borne pathogens <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> and <i>Pseudomonas syringae</i> pv. <i>tomato</i> were not able to grow on the semi-selective media mMXV and mTMB.
<b>Reproducibility</b>	
<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	100%
<b>Repeatability</b>	
<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	100%
<b>Organism 2.:</b>	<b><i>Xanthomonas euvesicatoria</i> pv. <i>euvesicatoria</i>(XANTEU)</b>
<b>Analytical sensitivity</b>	
<b>What is smallest amount of target that can be detected reliably?</b>	53 CFU/ml
<b>Analytical specificity - inclusivity</b>	
<b>Number of strains/populations of target organisms tested</b>	14 <i>X. euvesicatoria</i> , two <i>X. gardneri</i> , six <i>X. perforans</i> and six <i>X. vesicatoria</i> isolates were selected for determination of analytical specificity of the dilution plating on the semi-selective media mMXV and mTMB.
<b>Specificity value</b>	Analytical specificity was good. The method was able to detect all tested isolates of the XCV species complex.
<b>Analytical specificity - exclusivity</b>	
<b>Number of non-target organisms tested</b>	three isolates of <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> and one isolate of <i>Pseudomonas syringae</i> pv. <i>tomato</i>
<b>Specificity value</b>	no cross reaction The other tested seed borne pathogens <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> and <i>Pseudomonas syringae</i> pv. <i>tomato</i> were not able to grow on the semi-selective media mMXV and mTMB.
<b>Reproducibility</b>	
<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	100%
<b>Repeatability</b>	
<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	100%
<b>Organism 3.:</b>	<b><i>Xanthomonas euvesicatoria</i> pv. <i>perforans</i>(XANTPF)</b>
<b>Analytical sensitivity</b>	
<b>What is smallest amount of target that can be detected reliably?</b>	334 CFU/ml
<b>Analytical specificity - inclusivity</b>	

<b>Number of strains/populations of target organisms tested</b>	14 <i>X. euvesicatoria</i> , two <i>X. gardneri</i> , six <i>X. perforans</i> and six <i>X. vesicatoria</i> isolates were selected for determination of analytical specificity of the dilution plating on the semi-selective media mMXV and mTMB.
<b>Specificity value</b>	Analytical specificity was good. The method was able to detect all tested isolates of the XCV species complex.
<b><u>Analytical specificity - exclusivity</u></b>	
<b>Number of non-target organisms tested</b>	three isolates of <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> and one isolate of <i>Pseudomonas syringae</i> pv. <i>tomato</i>
<b>Specificity value</b>	The other tested seed borne pathogens <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> and <i>Pseudomonas syringae</i> pv. <i>tomato</i> were not able to grow on the semi-selective media mMXV and mTMB. no cross reaction
<b><u>Reproducibility</u></b>	
<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	100%
<b><u>Repeatability</u></b>	
<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	100%
<b>Organism 4.:</b>	<b><i>Xanthomonas hortorum</i> pv. <i>gardneri</i>(XANTGA)</b>
<b><u>Analytical sensitivity</u></b>	
<b>What is smallest amount of target that can be detected reliably?</b>	94 CFU/ml
<b><u>Analytical specificity - inclusivity</u></b>	
<b>Number of strains/populations of target organisms tested</b>	14 <i>X. euvesicatoria</i> , two <i>X. gardneri</i> , six <i>X. perforans</i> and six <i>X. vesicatoria</i> isolates were selected for determination of analytical specificity of the dilution plating on the semi-selective media mMXV and mTMB.
<b>Specificity value</b>	Analytical specificity was good. The method was able to detect all tested isolates of the XCV species complex.
<b><u>Analytical specificity - exclusivity</u></b>	
<b>Number of non-target organisms tested</b>	three isolates of <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> and one isolate of <i>Pseudomonas syringae</i> pv. <i>tomato</i>
<b>Specificity value</b>	no cross reaction The other tested seed borne pathogens <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> and <i>Pseudomonas syringae</i> pv. <i>tomato</i> were not able to grow on the semi-selective media mMXV and mTMB.
<b><u>Reproducibility</u></b>	

<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	100%
<b>Repeatability</b>	
<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	100%
<b>Test performance study</b>	
<b>Test performance study?</b>	no
The following complementary files are available online:	
	<ul style="list-style-type: none"> <li>• <a href="#">Isolation of Xanthomonas sp. from tomato and papeer seeds</a></li> </ul>

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