

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.

Laboratory contact details	Anses Plant Health Laboratory - Bacteriology, Virology and GMO Unit 7 rue Jean Dixmèras, 49044 Angers, France
Short description of the test	Detection of <i>Xylella fastidiosa</i> by immunofluorescence in plant material
Date, reference of the validation report	2015-09-30 - Rapport de caractérisation et de validation de méthode d'analyse - Détection de <i>Xylella fastidiosa</i> par PCR en temps réel sur plantes hôtes MA039
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?	
Description of the test	
Organism(s)	<i>Xylella fastidiosa</i> (XYLEFA)
Detection / identification	detection
Method(s)	Serological IF
Method: Serological IF	
Reference of the test description	
Other information	
Other details on the test	In-house antiserum produced in collaboration with INRA Unité de recherche Biopolymères, Interactions, Assemblages - Nantes in 2012
Are the performance characteristics included in the EPPO diagnostic protocol?	no
Performance Criteria :	
Organism 1.:	<i>Xylella fastidiosa</i>(XYLEFA)
Analytical sensitivity	
What is smallest amount of target that can be detected reliably?	- Grapevine (<i>Vitis vinifera</i>): ~ 10 ⁶ bact./mL - Peach tree (<i>Prunus persica</i>): ~ 10 ⁵ bact./mL - Coffee tree (<i>Coffea arabica</i>): ~ 10 ⁴ bact./mL - Coffee tree (<i>C. canephora</i>): ~ 10 ⁴ bact./mL
Diagnostic sensitivity	

Proportion of infected/infested samples tested positive compared to results from the standard test, see appendix 2 of PM 7/98	- Grapevine (<i>Vitis vinifera</i>): 40% - Peach tree (<i>Prunus persica</i>): 50% - Orange tree (<i>Citrus sinensis</i>): 78% - Coffee tree (<i>Coffea arabica</i>): 60% - Coffee tree (<i>C. canephora</i>): 30%
Standard test(s)	- Spiked matrices with bacterial concentration from 10^2 to 10^6 bact./mL - Grapevine spiked with <i>X. f. subsp. fastidiosa</i> (CFBP7970) - Orange tree spiked with <i>X. f. subsp. pauca</i> (CFBP8072) - Peach tree spiked with <i>X. f. subsp. multiplex</i> (CFBP8173 and CFBP8070) - Coffee tree (<i>Coffea arabica</i>) spiked with <i>X. f. subsp. pauca</i> (CFBP8072) - Coffee tree (<i>C. canephora</i>) spiked with <i>X. f. subsp. fastidiosa</i> (CFBP 8074) 20 samples per matrix (orange) 12 samples per matrix (grapevine) 12 samples per matrix (peach tree) 20 samples per matrix (<i>C. arabica</i>) 20 samples per matrix (<i>C. canephora</i>)
Analytical specificity - inclusivity	
Number of strains/populations of target organisms tested	Inclusivity tested with 10 target strains: 100% - <i>X.f. subsp. fastidiosa</i> (CFBP8069 -LSV0056/ CFBP8071 -LSV4041/ CFBP8083 -LSV4042/ CFBP7970-LSV2434/ CFBP8082 -LSV4040) - <i>X.f. subsp. pauca</i> (CFBP8072 - LSV4103) - <i>X.f. subsp. sandyi</i> (CFBP8077 -LSV4236) - <i>X.f. subsp. multiplex</i> (CFBP8173 -LSV4039/ CFBP8068-LSV0054/ CFBP8070-LSV4038)
Specificity value	100%
Analytical specificity - exclusivity	
Number of non-target organisms tested	Exclusivity tested with 17 non-target strains: 100% - 1 <i>Xylophilus ampelinus</i> (CFBP2098) - 2 <i>Xanthomonas arboricola</i> pv. <i>pruni</i> (LSV2574/LSV 2573) - 1 <i>Xanthomonas arboricola</i> pv. <i>juglandis</i> (LSV0862) - 1 <i>Xanthomonas axonopodis</i> pv. <i>citri</i> (LSV2647) - 1 <i>Xanthomonas axonopodis</i> pv. <i>aurantifolia</i> (LSV2680) - 2 <i>Xanthomonas axonopodis</i> pv. <i>phaseoli</i> (LSV1014/LSV3161) - 1 <i>Xanthomonas axonopodis</i> pv. <i>fragariae</i> (LSV3151) - 1 <i>Xanthomonas fragariae</i> (LSV2553) - 1 <i>Xanthomonas hortorum</i> pv. <i>carotae</i> (LSV1776) - 1 <i>Xanthomonas campestris</i> pv. <i>campestris</i> (LSV0455) - 1 <i>Xanthomonas campestris</i> pv. <i>juglandis</i> (LSV1158) - 1 <i>Xanthomonas hortorum</i> pv. <i>hedera</i> (LSV2303) - 1 <i>Xanthomonas translucens</i> pv. <i>graminis</i> (LSV0628) - 1 <i>Xanthomonas translucens</i> pv. <i>hordei</i> (LSV0629) - 1 <i>Xanthomonas oryzae</i> pv. <i>oryzae</i> (LSV0865)
Specificity value	100% No cross reaction
Diagnostic Specificity	
Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test	- Coffee tree (<i>Coffea arabica</i>): 100% - Coffee tree (<i>C. canephora</i>): 100%
Repeatability	

Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	- Grapevine (Vitis vinifera): 67% - Peach tree (Prunus persica): 83%
Test performance study	
Test performance study?	no

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