EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION
ORGANISATION EUROPEENNE ET MEDITERRANEENNE POUR LA PROTECTION DES PLANTES
(11-17239)

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.

Target Organism	Xanthomonas axonopodis pv. dieffenbachiae	
Short description	Detection of Xanthomonas axonopodis pv. dieffenbachiae by IF in leaves and pure culture	
Laboratory contact details	Anses, Laboratoire de la Santé des Végétaux- Unité ravageurs et pathogènes des plantes tropicales Pôle de Protection des Plantes, 7 Chemin de l'IRAT, 97410 Saint Pierre, France	
Date and reference of the validation report	2012-03 - Inter-laboratory ring test for the detection of Xanthomonas axonopodis pv. dieffenbachiae in Anthurium- Report Xad01- version 2	
Validation process according to EPPO Standard PM 7/98:	No	
Reference of the test description	0 PM 7/097 Indirect immunofluorescence test for plant pathogenic bacteria and PRI protocol for the detection of Xad by IF	
Is the test the same as described in the EPPO DP?	Yes	
Is the lab accredited for this test?	No	
Plant species tested (if relevant)	Anthurium sp.	
Matrices tested (if relevant)	Leaves and pure culture	
List of methods used		
Method for extraction / isolation / baiting of target organism from matrix	X	Extraction as in Appendix 1 of PM7/23(2)
Molecular methods, e.g. hybridization, PCR and real time PCR		
Serological methods: IF, ELISA, Direct Tissue Blot Immuno Assay	X	PRI protocol for detection of Xad by IF
Plating methods: selective isolation		
Bioassay methods: selective enrichment in host plants, baiting, plant test and grafting.		
Pathogenicity test		

Fingerprint methods: protein profiling, fatty acid profiling & DNA profiling		
Morphological and morphometrical methods intended for identification		
Biochemical methods: e.g. enzyme electrophoresis, protein profiling		
Other		
Analytical sensitivity (= limit of detection)		
What is smallest amount of target that can be detected reliably?	10^5 CFU.mL-1	
Diagnostic sensitivity		
Proportion of infected/infested samples tested positive compared to results from the standard test , see appendix 2 of PM 7/98	Comparative study : 90%; Collaborative study : 73%-76%	
Specify the standard test	Isolation + AGDIA Indirect-ELISA on pure culture (OEPP PM7/23)	
Analytical specificity		
Specificity value	89%	
Number of strains/populations of target organisms tested	50 (see attached downloadable file Appendix 1)	
Number of non-target organisms tested	53 (see attached downloadable file Appendix 2)	
Cross reacts with (specify the species)	The IF test can not exclude 6 strains among strains described as Xad but not pathogenic to Anthurium, strains that belong to the same species but to a different pathovar and saprophytic strains.	
Diagnostic Specificity		
Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test	Comparative study : 100%; Collaborative study : 90%-95%	
Specify the standard test	Isolation + AGDIA Indirect-ELISA on pure culture (OEPP PM7/23)	
Reproducibility		
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	83%-84%	
Repeatability		
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	70%-75%	
Test performance study		
Test performance study?	Yes	

Include brief details of the test performance study and its output.It available, provide a link to published article/report	During the interlaboratory ring-test, we observed that laboratories that were familiar with using IF tests to detect Xad produced excellent results, which were comparable to the results obtained with PCR. However, laboratories that were not used to performing the IF test to detect Xad either failed to produce results or obtained results with high rates of false negatives. Laboratories should be familiar with the IF test before using it for routine analyses to detect Xad.
Other information	
Any other information considered useful **e.g. robustness, ease of performing the test, etc.**	
The following complementary files are available online:	• Appendix 1-List of target strains • Appendix 2-List of non-target strains • Inter-laboratory ring test : Xanthomonas axonopodis pv. dieffenbachiae in Anthurium (Report Xad01-version 2)